

# COMAL TODAY 27

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# Editor's Disk

by Len Lindsay

If you do not recognize the illustration on the cover of this issue you probably don't have our index to the first 12 issues of *COMAL Today*. That picture celebrates the printing of an index for the last 14 issues! Yes, as part of this issue, you get INDEX #2 free. If you don't have INDEX #1 yet, we still have a few copies left, so order yours right away. While you are at it, remember the back issues have some of the best informative articles and program listings available on COMAL. Every issue except #3 is on hand and on special until our next issue is published:

**INDEX #1 & all backissues: \$1.95 each**  
(this includes UPS shipping if you order at least 4 issues, otherwise add \$1 each for shipping. If you need First Class mail delivery add \$1 each)

If you want the COMAL programs used to create the index, along with some/all of the data, order INDEX #2 Disk for \$9.95 (same for INDEX #1).

## **550 Amiga Program Disks \$1.95 each** (page 53)

Every Amiga user should be aware of the Fish Disk collection of programs. Fantastic is an understatement. Let all your Amiga friends know about our price on these disks. Better yet, subscribe to the Fish Disks. We bill your VISA / MC as they are shipped (usually in groups of 10).

## **USE STANDARD** (page 47)

The nice thing about COMAL was that it was standardized and available for many computers. Now we are extending this even further. We have a package/module named STANDARD that gives some handy new commands to IBM and Amiga COMAL. Even the C64 can utilize the routines, since they are just PROCedures and FUNCtions.

## **NETWORKS**

PeopleLink has gone out of business. After Christmas we will see if we can get a COMAL Club on GENie. They have good rates (\$4.95 per month unlimited access to over 100 areas; a low hourly rate to other areas). You may want to call them to ask if they have a COMAL Club yet. If

enough of you keep calling them, that should help them decide to let us have a COMAL Club! Call GENie at 1-800-638-9636. Join only if there is a COMAL Club. C64 people still have QLink where we have had a C64 COMAL Club for years now.

## **Once In A Lifetime Item**

Would like to own the first C64 COMAL 2.0 cartridge? It is signed by Jens Erik Jensen, Mogens Kjaer and Lars Larsen, the original three UniComal people! Would you like to own the first black cartridge put out by Commodore? It even has a photocopy label since the real labels were not ready yet! And it is signed by the production Commodore's production manager! If I recall, the very first cartridges were in hot demand and sold for \$400-\$500 each. The black cartridge of course sold at \$100. I also should be able to dig up a copy of the original COMAL Handbook, before it was published by Reston! It originally was a set of punched hole pages to put in a binder. If you want to own one of the few landmarks in COMAL's history, contact us now and put in a bid on these items (together or separately.)

## **AmigaCOMAL update**

There is a minor update to AmigaCOMAL available, version 2.04L. The L update arrived last month. There are some problems with this version that won't be fixed until AmigaCOMAL 3.0. If you are interested in this update, it is available for \$9.95. You may wish to wait for the 3.0 update coming soon! In either case, the internal tokens used by the COMAL system have changed from 2.0, so to transfer programs from 2.0 to the new updates you will need to LIST your programs to disk, then ENTER them into the new version.

## **FAX Us**

We have a FAX board in our computer so we can receive and send FAXes now. We still are working on getting a phone line for it, trying to get one line that will work for FAX, BBS/Data, and voice. This is supposed to be possible. Can anyone help us with this? We have Quick Link II and BitFax software.

# COMAL Today Index #2

by David Warman

This is an index to *COMAL Today* issues 13 through 26. I tried to make it as close as possible in format to Kevin Quiggles' index to the first 12 issues. (*a limited number of the first INDEX are still available, see the order form.*) The index is divided into three categories: Keywords, Authors, and Titles. In each category, the issue/page reference is placed after every entry as in the example below.

Scientific American problem, simulation, voting game, 2.0 17-30

The issue number and page are the last things listed in an index entry in the format issue-page. The example article would be found in issue 17 on page 30.

## AUTHOR INDEX

The Authors section consolidates all contributions by a single person into one entry, with each issue/page listed. In cases where I was not sure if two similar names were the same person or not (such as one credit showing a name with middle initial and another one listing the same first and last name but no middle initial), I listed them separately unless I knew they were the same person [*others were combined by the editor*]. Collaborations are indexed by the name of all authors.

I included some extra information after the author's name as applicable.

(L) means that the contribution was a letter or a note rather than an article or program.

(Q-Link ID) means the name is the ID of the person on Q-Link (Quantum Link).

(Name) is the real name for the ID used.

(student) means the article or program was submitted by a school student and not credited with a full name.

## TITLE INDEX

The Titles section is a list of each article or program title that appeared in *COMAL Today*. In some cases where a title was not given, this entry will be a topic instead. Some titles also have an identifier after them in parentheses to indicate what version of COMAL they refer to. This should only be used as a general guideline. Some programs, such as machine language packages, are very specific to a particular version of COMAL, but many apply equally well to systems other than the one on which they were written. The identifier 2.0 usually means the C64 COMAL 2.0 cartridge, but may also apply to any 2.0 level COMAL. The identifiers used are:

0.14 - C64 COMAL 0.14  
2.0 - C64 COMAL 2.0 cartridge  
Amiga - AmigaCOMAL  
C128 - Commodore 128 COMAL  
CP/M - CP/M COMAL  
IBM - UniComal IBM PC COMAL

## KEYWORD INDEX

In the Keywords section, each entry is a group of words or phrases describing the article or program. The entry will be listed under each significant word in each phrase. Here is how the example entry used previously would be listed:

game, Scientific American Problem, simulation, voting, 2.0 17-30  
problem, simulation, voting game, Scientific American, 2.0 17-30  
Scientific American problem, simulation, voting game, 2.0 17-30  
simulation, voting game, Scientific American problem, 2.0 17-30  
voting game, Scientific American problem, simulation, 2.0 17-30

In addition, many entries have a version identifier added onto the end, such as the 2.0 in the above example. Other identifiers are the same as noted for the TITLE INDEX.

Of course, many of the articles may apply to other systems as well, and a lot of the programs will run under other COMAL implementations with little or no modification. If an entry has no version identifier after it, it is probably general information or a program using mainly Common COMAL keywords which can be ported easily to another system.



## COMAL Today Index #2

For those interested in statistics, in this index are  
[prior to manual editing for this issue]:

4323 keyword entries  
839 title entries  
249 author entries  
-----  
5411 total entries

The first index (to issues 1-12) was processed on a Commodore 64 or 128. Judging by the processing times Kevin Quiggle mentioned, I was fortunate to have an Amiga on which to create this index. I was able to process and sort the entire database at once using a couple of custom COMAL programs, rather than having to break to files down into several subfiles to fit in memory. The processing times in the table below are given in seconds.

	File size	Read time	Sort array	Write index	Read index array & write data file
Authors:	13K	22	12	2	19
Titles:	24K	42	16	4	35
Keywords:	232K	575	126	18	211

The data in each of the files above was first read into an array. Read times are disproportionately high compared to write times because after each entry was read it was converted to upper case and all commas were stripped to make it sort properly. Next the array was sorted with the fast quicksort routine. An index of numbers representing each entry's position in the sorted list was then written to disk. After that the index was read into one array, and the original data was read into another array in the positions determined by the index values. Finally, the sorted array was written back to disk.

The program used to compile this index is an unfinished expanded version of Robert Shingledecker's and Steve Smullen's database program from *Today Disk #14*. The program is fully functional in most ways, but the label and printing sections are not implemented yet, and there are many final touches to add. This customized program will be available on *Index #2 Disk* for \$9.95 for Amiga (and probably on IBM and C64 disks as well). The disk also will include some or all (depending on what fits on the disk) of the index entries.

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# Letters & Notes

## COMAL & LIFE

A. W. Jackson of Towson, Maryland writes:

Please advise versions of COMAL available for an IBM PC clone. Life without COMAL = ZERO. My C128 with COMAL cartridge still produces 90% of all computer output. Thanks and best wishes for the coming year.

*[Versions of COMAL for the IBM from UniComal are very good. However, they carry high prices that match this excellence. The Designer 1.0 package also sounds wonderful. See the end of the order form for IBM COMAL items (plus the INDEX #2 disk).]*

## COMAL & AFRICA

*Long time COMAL users will remember Richard Bain. He contributed to COMAL Today, and then became part of our staff! He wrote many amazing and informative articles (just check the Author Index in this issue ... only one other person has more entries.) Richard has been living in Africa with the Peace Corps for the past year and will be there for one more year. He is the teacher for a small village there. Life is hard. No water for months on end. Searing hot temperatures. In one letter he writes:*

*It is too hot even for those who like hot climates. There isn't a drop of water flowing in the pipes. Students are thirsty...*

*On July 25 he wrote:*

*We are well into the dry season and quickly approaching the dust season. The last rain was in early June and that was a freak storm. It normally doesn't rain after April. The grass is all dead, the leaves are falling from the trees/bushes, and the ground is bone dry. As the winds pick up, the dust will get worse and worse. Things should improve in October or November when the rains return.*

*Books are extremely rare for Richard (we send him a couple paperbacks every month or two):*

*Any book sent here is a good book. Most of the books sold in this country are expensive rubbish.*

Science Fiction, Adventure and Fantasy are my favorites. Arthur Clarke is one of my favorite authors.

*Now we just heard this good news from him:*

Our school has ordered an IBM PC computer. I'm not sure when it will arrive, or what the disk format will be.

*On hearing that, we contacted UniComal to see if they would donate a copy of IBM PC COMAL to Richard & the Peace Corps. While they would not donate one, they offered a copy at a good discount, so we bought it for him (they will ship it to him with both 3½ and 5¼ disks). So COMAL will be the official language in Richard's village! (yes, I know, it is probably the only computer within a hundred miles, but that's beside the point. Richard admitted that many people in his area would not know the difference between a computer and a VCR.)*

*If anyone is interested in writing to Richard:*

Richard Bain  
Matshekge Hill  
PIBag 24  
Bobonang, Botswana     AIR MAIL

*If you send books, be advised that small packages are the best as Richard has to travel a long distance to pick up a large package. Also, send it Air Mail or it takes months to get there. Be prepared to pay more for the postage than for the books (\$10)! A typical small package from us is two used paperback books and a used SF magazine like Analog. Since they are used, we state a value of \$1 each on the sticker required on the outside of the package, and we check that they are a gift. Remember Richard has to deal with customs, so a small value is a benefit. However, be honest. If the book is obviously new with \$5.95 printed on its cover, that should be the value listed on the sticker you put on the package. If the book is obviously used, we state used book \$1 for its value. (Yes, we buy them at Half Price Books for 95¢ each.)*

*Final note: Richard did not ask us to mention this here. I just thought it was interesting news for COMAL users. I am sure he will appreciate a few*



*letters and books. However, I am not sure how much money he has available for buying postage stamps or paying customs (very little I imagine). Maybe include a one dollar bill in with your letter to chip in on his postage bill (US stamps do not help mail letters from Africa). I do not include a letter with my books, but mail it in a separate envelope ... part of my letter advises what books I have just sent, so he knows what to expect. And a note to Richard: if you get too many letters and packages to reply to all, let us know and we can print a message in the next issue from you.*

## AMIGA & IBM NOTES

There is a quick and easy way to see all the new commands added by a package/module that is in memory. AmigaCOMAL use LISTPACK. IBM COMAL use INTERFACE. Example:

```
LISTPACK packagename // Amiga
INTERFACE modulename // IBM
```

packagename is the name of the package in memory; modulename is the name of the module in memory. You get a list of all the commands in that specific package, whether each is a PROC or FUNC, and how many and what type of parameters it needs. For a more permanent record, you can send it to a file or printer:

```
LISTPACK packagename TO "file" // Amiga
INTERFACE modulename TO "file" // IBM
```

## AmigaCOMAL Notes

Svend Pedersen, author of AmigaCOMAL writes:

Hello Len! Thank you very much for your letter, the disk and *COMAL Today*. It is very impressing to see how intense you are working with the AmigaCOMAL. Especially the menus are impressing.

On the disk a lot of smaller bugs were listed. Most of them are smaller ones and a single is more serious. The serious one is the "-i option" error in ComalComp. This error may be corrected by running this little program:

```
OPEN FILE 1,"AmigaCOMAL:Compiler/ComalComp",READ
OPEN FILE 2,"ram:ComalComp",WRITE
DIM line$ of 1000
WHILE NOT EOF(1) DO
  line$=get$(1,1000)
  pos="2408" IN line$
  IF pos THEN
    line$(pos:pos+3)="2804"
  ENDIF
  PRINT FILE 2: line$,
ENDWHILE
CLOSE
```

The error will only be cured partly. You will still get a GURU if you specify a file that is not a valid install file.

About all the suggestions, I can say that I have read them with interest, but they will not be implemented in version 2.x. I am working on version 3 and only serious errors in version 2.04 will be corrected. In version 3, I am trying to remove all the inflexibilities in version 2.x - and of course it will have an AREXX port. In fact, it will be designed so that AmigaCOMAL 3.0 could be run INSTEAD of AREXX.

At this moment I cannot say much about this COMAL. But I can say that it will be COMMON COMAL compatible and in the extensions it will be more compatible with UniComal 3.x for IBM PC. For instance you may include procedures & functions in the records so that AmigaCOMAL will also be an OOP-language. You should look forward to this new AmigaCOMAL. It's my plan to make it the best COMAL ever seen!

## AmigaCOMAL Packages

Jesse Knight has sent along some packages for AmigaCOMAL as well as text files of notes. These will be on *Amiga Today Disk 27*.

## IBM PC & LaserJet Module

Craig Van De Grift has contributed a module for UniComal PC COMAL that adds many commands for use with an HP LaserJet. It will be on *IBM Today Disk 27* along with a demo program.

# Parameters Revisited

by David Warman

In the article *Parameters* in *COMAL Today* #26, I mistakenly referred to VALUE parameters as ALIAS parameters. The two types of parameters are really REFERENCE and VALUE. In most places where I said "alias", "value" should be substituted. The following is an example of a VALUE parameter.

```
pause(2)
//more of program statements here
PROC pause(duration)
  //statements go here
ENDPROC pause
```

An easy way to remember it is to imagine passing a constant, like the "2" in the example above. Obviously you are passing a value to the PROCEDURE, not a variable, since a variable is not used in the calling statement. Inside the PROC COMAL creates a new variable called duration and assigns it a value of "2". After the PROCEDURE is finished, duration ceases to exist and the memory it used is freed.

You can also use a variable for the parameter:

```
x:=5
pause(x)
```

You are still passing a value, "5" in this case, to the PROCEDURE, not the variable x itself. That is the reason you can do whatever you want to the parameter value inside the PROCEDURE and the value of "x" will not change.

If the PROCEDURE pause was composed of the line:

```
WHILE x>0 DO x:=1
```

x would still equal 5 after the PROC was executed.

With REFERENCE parameters, the variable itself is passed to the PROCEDURE or FUNCTION.

```
string$:="Test string"
PRINT string$
PRINT uppercase(string$)
PRINT string$
PROC uppercase(REF text$)
  //statements go here
ENDPROC uppercase
```

This means that you are passing the actual variable string\$ to the PROCEDURE, so any changes made to text\$ are actually being made to string\$; the name text\$ is just an alias. When you print the value of string\$ after executing the uppercase PROC it will contain all uppercase letters. If the previous example were executed, the following would print on the screen:

```
Test string
TEST STRING
TEST STRING
```

The term alias is more appropriate to REF parameters where the variable name in the PROC/FUNC header is different than the one in the calling statement than it is to value parameters. I suppose value parameters with different names in the calling statements and PROC headers could be termed alias, since the names ARE different, but that is really misleading because the variable in the PROC header doesn't represent the original variable; it just assumes its value.

REF parameters are necessary if you want to make changes to a variable inside a PROC and get the changes back out, regardless of whether or not the PROC is CLOSED. REF Parameters are also required for arrays in C64 COMAL 0.14 & Power Driver. REF parameters have the advantage of using less memory, since a duplicate variable is not created.

Another little error in the *Parameters* article is where it stated that the value returned by count'spaces("Four score and seven") was 4. In fact, the result should be 3, as there are obviously 3 spaces in the string (this error can be attributed to the fact that the article was cut down from another version that I wrote for my User Group newsletter).

I hope this clears up any misunderstanding caused by my first article, and I would like to thank the reader who brought the error to the attention of the COMAL Users Group.

# IBM PC COMAL - DESIGNER 1.0

by UniComal

*[We have not seen this package so cannot give an evaluation of it at this time. UniComal would not send us a review copy, but wanted us to buy one ourselves in order to review it. Maybe if someone buys it they can let us look at it? The following is the total info we have from UniComal on Designer.]*

Statistics have shown that more than 80% of all potential users or customers appraise a new product from the first screen images encountered.

Many software developers are familiar with this obstacle, but do not have the time or the possibilities to design a presentable user interface to their programs.

**Designer** is a development tool, used for designing text based screen objects - individually defined or according to the SAA standard - under the UniComal programming environment. This menu based facility-tool can be used for designing menus, input fields and windows - in short the entire user interface.

The screen objects are "drawn" on the screen, to be stored for subsequent code generation. When the program developer has completed the application, **Designer** produced the code necessary.

The code is located in a UniComal module, which can be utilized directly from the application program. As a side effect, the application program will take up less memory, obtain more clarity and easy maintenance. The generated code can subsequently be altered under the UniComal programming environments. *[ie, the generated code is written in COMAL.]*

**Designer** is comprised of a collection of predeveloped utility modules:

**Info Bars:** A one-line window containing information text. It is normally used on the upper part of the screen for titles or on the bottom of the screen for functions.

**Designed Windows:** Individually designed or according to the SAA standard with title text, bottom text(s), scroll bar, shadow, etc.

**Dialogue Windows:** Windows for input fields, prompts and messages. Input fields allow strings, integers, reals, date and time - and complete text blocks.

**Help Windows:** Help texts can be located in a file to be displayed by Designer. The help text can be displayed in a window with hyper text and index.

**Directory Windows:** Outline of directories and file selector facilities. The module can be integrated in any UniComal program.

**Menus:** A window, or a bar, with one or several text elements (words). The system pauses until a word is selected. For example, selecting a word could cause the program to restart or activate another menu (menu hierarchy.)

**Editors:** To be utilized when entering or editing texts in windows, menus and input fields. The module can be integrated in any self-made UniComal program.

**Designer** produces efficient error free code every time. There is no need for the tedious test phase, where the program must be executed to check whether the screen coordinates and the color setup corresponds with the design planned. The user simply "draws" the desired image on the screen, and when satisfied, the user instructs **Designer** to produce the necessary code.

**Designer** comes with an extensive user documentation, including thorough and complete examples. The documentation is provided in a format, designed to fit the UniComal manual. *[We refer to this as Doc Box format pages.]*

**Designer** is available by special prepaid order from COMAL Users Group, U.S.A., Ltd. See the order form at the end of this issue of *COMAL Today*.

# Caser Package For C64 Cartridge

by David Warman

This package (on *Today Disk 27*) for the C64 COMAL 2.0 cartridge converts a text string to upper or lower case, or toggles the case of all letters in it. Since the case conversion is done in machine language it is very fast. To use it just LINK it into memory and issue the USE command (in a program or direct mode):

```
LINK "pkg.caser"  
USE caser
```

The package contains the following PROCedures and FUNCtions:

## **FUNC upper\$( <str> ):**

Converts the string passed to it to all uppercase letters. The longest string that can be passed to any of the FUNCtions in this package is 255 characters. No error checking is performed on string length, so be sure not to pass strings that are too long. If you do there won't be any spectacular crash or anything like that (hopefully). The only thing that will happen is that the last 256 bytes, or multiple thereof, will be ignored.

## **FUNC lower\$( <str> ):**

Converts the string passed to it to all lowercase letters, with the same restrictions as for UPPER\$.

## **FUNC swapcase\$( <str> ):**

Switches the case of all letters passed to it, i.e., 'A' becomes 'a' and 'a' becomes 'A'.

All three of these FUNCtions use "value" parameters, so if a string variable is passed to them the original variable will not be changed, only the string returned by the FUNCs will be switched to the specified case. This can be used to make a case-insensitive comparison, such as:

```
IF upper$(answer$) IN valid$ THEN ...
```

The original string is unchanged, and you need only make one comparison instead of a separate comparison for each case.

## **PROC set'upper( <int> ):**

On the Commodore 64 there are two sets of uppercase letters: one with ASCII values from 97 to 122 and the other from 193 to 218. This command determines to which set UPPER\$ will convert lowercase letters. A parameter of '0' selects the first set, from 97-122; a '1' selects the second set. The default is '1', since PRINT ORD("A") returns '193' in COMAL. In most cases it doesn't make any difference which set you use. The only situation I know of where it is important is when ENTERing a LISTed program into 2.0, which requires that uppercase keywords use the second set. This package is not likely to be used to change the case of programs to be ENTERed, but the option is there in case it's needed.

## **FUNC version'caser\$:**

Standard package version FUNCTION that returns author, version, and date information, as well as a list of the commands and a very brief description of them. This is version 1.0.

I wanted to make this package as small as possible, so instead of adding or subtracting a certain value from a character to get its alternate-case equivalent, I used the bit operator BITXOR. Without going into detail, it just happens (perhaps not unintentionally?) that the ASCII values of the alphabetic characters are spaced apart just right so that toggling a single bit will change the case of the letter. This has the advantage of allowing me to use the same algorithm for all three of the case changing FUNCtions, making the package a good deal smaller. However, the technique I used has one side effect worth noting: when converting to lowercase, BOTH uppercase sets will be converted; ASCII values 193 and 97 will both be changed to 65 (a lowercase 'a'). The reverse is also true: characters with ASCII values 65 and 97 will both be converted to 193, if SET'UPPER is set to '1'. If it is set to '0' (which selects 97-122 as the uppercase set to use), then ASCII values 65 (lowercase 'a') and 193 (uppercase 'A') will both be changed to 97 (the other uppercase 'A'). Considering the situations where this package may be used, I don't think this will cause any undesirable effects.

# The Conversion of FORTRAN Scientific Subroutines to COMAL

by Craig T. Van Degrift

In my work as a physicist, I am confronted with the fact that the most efficient, thoroughly proven routines for solving the mathematical problems of scientists are written in FORTRAN. Libraries containing hundreds of megabytes of public-domain FORTRAN source code are in use by scientists throughout the world. After having experienced the programming ease and readability of COMAL, however, I find it frustrating to return to FORTRAN in order to use these routines.

One approach would be to compromise; write a COMAL supervision program which would execute compiled FORTRAN units either as a package or via the COMAL "PASS" command. This would allow one to keep the user, disk, and printer interfaces under easily modifiable COMAL control while still secretly using the FORTRAN scientific subroutines.

Alternatively, one could take the bull by the horns and convert the FORTRAN routines to COMAL. They could then be easily adopted to specific applications. Also, after being converted to a structured form, their inner logic could be much more easily studied and modified. In principle, the conversion can be done automatically since both computer languages are governed by rigid syntax rules.

I chose to experiment with a quick-and-dirty attempt at the second of these two approaches. First, I wrote a COMAL program named FORTOCML which handled most of the simple, but tedious, conversion work. It produced an output which required further processing by hand. When the program finally could be ENTERed into the COMAL editor, the automatic indentation, syntax checking, scope facilities, and editing features of UniComal 3.0 greatly facilitated finishing the job.

My immediate target was a set of FORTRAN routines said to be the world's best for solving for the electrical potential around charged materials in 2-dimensions. The main routine is called HWSCRT and was written during the 1970's by J. Adams, P. Swarztrauber, and R. Sweet of the

National Center for Atmospheric Research. HWSCRT calls a routine GENBUN which in turn calls POISD2, POISN2, and POISP2 to perform the actual solution in the presence of different kinds of boundary conditions (Dirichlet, Neumann, and periodic). Two routines, TRIX and TRI3 solve related tridiagonal equations with the help of a couple of other routines called COSGEN and MERGE.

Much of the conversion work is very simple - changing assignments to `:=`, `DO` to `FOR`, `.LE.` to `<=`, etc. Since COMAL is a structured language with no statement numbers, most of the remaining conversion process entails the creation of structures and the removal of statement numbers. Some FORTRAN code will be so interwoven, that this process cannot be done by this version of FORTOCML. Nevertheless, the manual disentanglement process is much easier after FORTOCML has restructured the simple branching.

The current version of FORTOCML, while useful, is terribly written. It is truly a hack job designed just to accomplish a particular task. Unfortunately, I cannot now take the time to rewrite it. Certain surprising omissions are the lack of conversion of `i/o` instructions and the failure to handle computed GOTOs and the old-fashioned `IF (...)+,0,-` FORTRAN branching code.

Most scientific subroutines handle matrix operations or solve differential equations which are written in matrix form. Thus, ordinary `i/o` is rare, but instead there are numerous small loops and quite frequent passing of vectors and arrays as parameters to subroutines. Unfortunately, when arrays are passed as parameters to procedures, they are handled differently in the two languages. For example, the one-dimensional array `A(I)` declared in FORTRAN as `DIM A(10)` and passed to a subroutine named `PROCESS` by use of the statement `CALL PROCESS(A(3))` will hide `A(1)` and `A(2)` from the subroutine. Within SUBROUTINE `PROCESS`, the corresponding array will be given a phony dimension of `DIM AA(1)`. Thus, in `PROCESS`, `AA(1)`, `AA(2)`, `AA(3)`,... are, respectively, the names used for `A(3)`, `A(4)`, `A(5)`, ..., etc. In COMAL one must separately pass an offset ( $2 = 3 - 1$  in this



example) to the procedure and then explicitly add it to the indices of each reference to AA in the PROC. In addition, special complicated techniques are used in FORTRAN to make subroutine storage requirements flexible. These are not needed in COMAL because the availability of stack storage allows COMAL procedures to dynamically use system storage for their arrays; space is only allocated when needed.

Final debugging involved comparing the output and intermediate results of the COMAL and FORTRAN executions. Errors found at this point pertained to integer division, the manual untangling of the FORTRAN branching, and errors introduced in *sanitizing* the code for clarity and beauty. One must bear in mind that FORTRAN truncates when converting integer values to floating point values and that COMAL rounds. FORTRAN example:  $K=I/J$ ,  $L=A$  and  $M=A/B$ . COMAL equivalent:  $k\#:=i\# \text{ DIV } j\#$ ,  $l\#:=\text{INT}(a)$ , and  $m\#:=a \text{ DIV } b$ , respectively.

When the conversion was complete, I could compare the same complicated mathematical calculation performed by COMAL and by the best 80386 FORTRAN Compiler, OTG FORTRAN 2.2. I also ran the FORTRAN version on several other computers. The results are shown in the following table for the calculation of the potentials on a 110 panel x 110 panel grid caused by a point charge in the center and periodic boundary conditions around the perimeter. On the 80386 machine without an 80387 numerical coprocessor, COMAL was nearly twice as fast as FORTRAN! On the other hand, when using the coprocessor and cache, the FORTRAN ended up fastest.

Machine	Prec (digits)	COMAL (sec)	FORTAN (sec)
25 Mhz 80386	16	78.3	143.7
25 Mhz 80386	8	n/a	139.7
25 Mhz 80386/80387/cache	16	28.0	6.4
25 Mhz 80386/cache	16	57.8	n/a
Sun 3/160/68881	8	n/a	11.9
Sun Spark Station 1+	8	n/a	0.75
Cyber 855 Mainframe	16	n/a	0.75

In *COMAL Today* #24 Solomon Katz described a COMAL/FORTRAN conversion program. COMAL/C converters are in the works. Ultimately, language conversions may allow us to use the scientific subroutine libraries of FORTRAN as COMAL packages in C. I hope a few COMALites can create the ultimate FORTRAN/COMAL/C interconversion program.

# Decisions

by David Warman

Let's talk about COMAL's decision-makers. No, I don't mean the COMAL standards group that decides what the COMAL language is, but rather the program structures used to determine how the program flows from one line to another. Decision statements are important in any language; without them the program would execute from the first line to the last, without any diversions, apart from any loops that may exist.

The most familiar type of decision maker to BASIC users is the IF statement. In addition to controlling the program flow, IF can also assign a value to a variable, based on the value of some other variable. In BASIC, you're familiar with statements such as:

```
IF SC=25 THEN F=1
```

COMAL also has the one-line IF statement.

```
IF score=25 THEN finished=TRUE
```

Note that these lines didn't affect the program flow; they merely checked one variable, then set a flag if a certain condition was met -- namely if the score had reached 25 points. Here's an example of an IF statement that does alter the program flow.

```
IF T=1500 THEN GOSUB 3924 //BASIC version
IF time=1500 THEN reset'time // COMAL version
```

If time (or T) equals 1500, then the program flow jumps to a subroutine, which does what it is supposed to do, after which the program flow returns to the line following the IF statement. Here is where the similarity between COMAL and BASIC ends. COMAL also allows multi-line IF structures. Here is an example.

```
IF "i" IN t$ THEN
  printit("i" IN t$,t$)
ELIF "a" IN t$ THEN
  printit("a" IN t$,t$)
ELIF "u" IN t$ THEN
  printit("u" IN t$,t$)
ELIF "o" IN t$ THEN
  printit("o" IN t$,t$)
ELIF "e" IN t$ THEN
  printit("e" IN t$,t$)
ELSE
  NULL // do nothing
ENDIF
```

To save time, you need not type the word **THEN**. COMAL will automatically supply it for you when you LIST the program, or in some versions the instant you press the RETURN key! Also, the ELIF portions may be repeated as many times as necessary, or left out completely.

This example uses a multi-line IF structure to detect the occurrence of any one of several possible conditions. (NOTE: This particular example is an edited form of a program segment taken from the winning entry for May in the **Real Time Programming Challenge** on PeopleLink. It may not be most efficient, but is an example.) When a condition is met, the proper routine is called and its statements are executed, then the program returns to the line following ENDIF. The instructions after ELSE will be followed if none of the conditions following IF or ELIF are true. If you omit the ELSE part and none of the other conditions are met, then nothing will happen.

Note that only **one** IF/ELIF statement block will be executed, even if more than one is true. For example, if the string "t\$" contains both an "i" and an "a", only the ELIF section for "i" will be processed, since "i"'s are checked for first. After executing the statement(s) following IF or ELIF, the program will continue with the line after ENDIF, so only the **first** true condition will be tested (no further condition testing is done for that IF statement).

The IF structure is not the only decision maker at COMAL's disposal. CASE is another choice; more efficient in at least some circumstances. The closest approximations of the CASE statement in the BASIC language are ON GOTO and ON GOSUB (and on Prancer, on Vixen!), but those are vague comparisons at best. Here is an example of its format:

```
INPUT "Enter a choice ":number
// Actual CASE structure starts on next line
CASE number OF
  WHEN 1
    // do menu option 1
  WHEN 2
    // do menu option 2
  WHEN 0,3
    quit
  OTHERWISE
    NULL
ENDCASE
```

As you can see, CASE differs from IF in that IF tests for a different condition in each IF/ELIF line, whereas CASE **memorizes** the control variable or expression after the word CASE, then checks for a match after each WHEN until it finds one. You can have any number of WHEN lines, but must have at least one. If no match is found, the statements after OTHERWISE are executed.

Let's say you enter a 2 at the INPUT statement above. When COMAL gets to the CASE line, it looks up the value for number and finds it is 2. It then checks the first WHEN statement, WHEN 1. This is like saying IF number=1 THEN, but is more compact and memory efficient. If the condition is not true, as in this case, the next WHEN line, WHEN 2, is checked. This line is true, so the statements after WHEN 2 are executed. As many statements as you want can follow a WHEN statement. If the CASE structure is used as a menu selector, as it often is, the bulk of the program could be run through before the program returns to the next line in the CASE structure. But eventually, unless it is stopped, the program will finally finish the last statement of the statement group that follows WHEN 2. Only one CASE condition can be selected, and since we have already found that one (in WHEN 2), the program jumps to the line after the ENDCASE.

If the second WHEN were not true, the program keeps checking each following WHEN line until it finds one which evaluates to TRUE. If none were found, the statements following OTHERWISE would be carried out.

Remember: each IF and ELIF can test for any condition, even ones involving totally different variables, but CASE only looks at one variable or expression and checks for specific matches. CASE can handle strings just as well as numbers and can test more than one value at a time. Example:

```
CASE reply$ OF
  WHEN "y","Y"
    do'it
  WHEN "n","N"
    dont'do'it
  OTHERWISE
    Print "Try again"
ENDCASE
```

IF or CASE, the choice is yours.

# STANDARD

by David Warman (and Len Lindsay)

One thing I really like about COMAL is its ability to easily merge "outside" routines into a program. Any version of COMAL can merge disk-based PROCedures and FUNCtions into a program. Most versions can use EXTERNAL PROCs and FUNCs for temporary program extension, enabling a program to run in modules that would not all fit into memory at once. 2.0 level COMAL's also have package utilities which allow machine language routines to be called by name in a program. AmigaCOMAL and IBM COMAL take this concept one step further and allow packages to be written in COMAL itself, in addition to Assembly, C, and other compiled languages, so anyone who knows COMAL can write packages for these systems! (Note that IBM COMAL now calls them modules.)

COMAL-coded packages are simple to develop. Related PROCs and FUNCs can be collected together into a COMAL package. The advantage of putting them in a package is that all the routines can be added to any program with a single USE statement, instead of each one having to be individually merged.

On the now defunct People/Link, many COMAL programs were passed back and forth between Amiga and IBM users. We decided that we needed a set of commonly used PROCedures and FUNCtions that could be formed into a package and used by both machines, so we developed the STANDARD package. By placing these PROCs and FUNCs in a package, they do not have to be repeatedly typed or merged into new programs, and the many little "support" routines that most programs use are tucked away in the package where they don't muddle up the program listing.

When writing a Common COMAL program, you also can use any command in the STANDARD package and know your program will run under both IBM and Amiga COMALs. All that is required is that the other users have the STANDARD package in their packages directory. A program written in IBM COMAL, for example, can have a USE STANDARD line placed at the beginning of the program, which gives it access to all of the commands in the Standard package. The program then can be transferred to an Amiga and loaded into AmigaCOMAL. When the RUN command is issued, AmigaCOMAL will LINK the Standard package into memory and the program will be able to access all the same commands as the IBM COMAL program had! (This assumes that the Standard package is already available in a directory where AmigaCOMAL can find it, normally the packages directory.)

Following is a brief example of package structure from AmigaCOMAL. A package may consist of zero or more PROCs and FUNCs, plus a matching EXPORT statement for each PROC/FUNC to tell COMAL what routines are contained in the package (you do not have to export every routine you use in the package.) The EXPORT statements are similar in purpose to the header tables in C64 2.0 machine language packages. The package may also contain initialization statements, which are only executed the first time the package is called.

```
0070 EXPORT clearlines(,), clearlines(,) AS clear'lines
0200 EXPORT center() // center text on current line
0860
0870 PROC clearlines(row1,row2) CLOSED
0880   FOR x#:=row1 TO row2 DO PRINT AT x#,1: chr$(1),
0890   ENDPROC clearlines
0900
2640 PROC center(text$) CLOSED
2650   center'at(currow,text$) // call to another PROC
2660   IF len(text$)<=79 THEN PRINT // new line
2670 ENDPROC center
```

That's it! A complete ready to use COMAL package. Just SAVE the above lines with a ".cmp" ending (i.e. "SmallPack.cmp") and place it in the Packages directory and any program can use it by having the line USE SMALLPACK placed at the start of it. As of AmigaCOMAL v2.04, the ".cmp" ending (CoMal Package) is used to distinguish COMAL-coded packages from machine level ones with a ".pck" ending. IBM COMAL needs to add a MODULE and ENDMODULE to the start and end of the code:

```
0065 MODULE
2675 ENDMODULE
```

Notice the EXPORT AS statement in line 70. AmigaCOMAL can export a PROC/FUNC with more than one name (IBM COMAL cannot do this). The CLEARLINES PROC could be called in a program with either CLEARLINES or CLEAR' LINES (that is, with or without an apostrophe in its name). Also note that line 2650 calls another PROC within the same package which isn't listed here (this example is part of the Standard package). IBM users should issue the SCAN command before saving the package/module.

We had hoped that the very same Standard package could be used in both IBM COMAL and AmigaCOMAL, but there are structural differences which make that impossible, so a separate version was developed for each system. However, the actual PROCs and FUNCs are virtually identical; the differences lie mostly in the package structure (ie, AmigaCOMAL needs the CLOSED at the end of PROC/FUNC header lines.) Since a single source listing of the package could

not be used on both machines, we decided to add a few routines to each version to make up for other differences in AmigaCOMAL and IBM COMAL. Thus the IBM version adds the routine WAIT (which AmigaCOMAL has built-in.) The AmigaCOMAL version adds PAUSE, LOWER\$, UPPER\$ which are part of IBM COMAL (also an optional INPUT'AT.)

Here is a brief description of the routines contained in the Standard package.

**VERSION'STANDARD\$:** displays version and author information.

**FILE'EXISTS(filename\$):** Checks if the specified file (or volume:path/file) exists and returns TRUE or FALSE.

**TYPE(filename\$):** Similar to the DOS and AmigaDOS TYPE command. It gets characters from the specified file one by one and prints them. The text can be paused with the space bar and aborted with ESC. It first calls FILE'EXISTS, which eliminates the need for you to do so.

**CLEARKEYS (or CLEAR'KEYS):** Clears all keys from the keyboard buffer so the next KEY\$, INKEY\$, INPUT does not unintentionally pick them up.

**CLEARLINES(row1,row2) (or CLEAR'LINES...):** Prints a clear-to-end-of-line to clear all text between the specified lines, inclusive. This is CHR\$(1) for AmigaCOMAL. It is CHR\$(0)+CHR\$(117) for IBM COMAL.

**NUMBER(text\$):** Returns TRUE if the string passed to it contains a valid number. It can be used to prevent the VAL() function from causing an error.

**GETKEY\$:** First clears the keyboard buffer, then goes into a loop until a key is pressed. The key pressed is returned to the program.

**GETVALIDKEY\$(valid\$):** Clears the keyboard buffer, goes into a loop until a key from the string valid\$ is pressed, then returns that key to the program.

**STRIPCHAR\$(text\$,char\$):** Removes all <char\$> characters from the end of <text\$>.

**GETINFILE(REF infile\$):** Opens the file <infile\$> for input. If the file does not exist, the user is notified and prompted again for the filename. Amiga alternate usage: GET'INFILE.

**GETOUTFILE(REF outfile\$):** Opens the file <outfile\$> for writing. If the file already exists, the user is asked for permission to overwrite it or to enter another filename. Amiga alternate usage: GET'OUTFILE.

**GETFILES(REF infile\$,REF outfile\$):** Combines the above two PROCs. First asks for an input filename, then an output filename, and verifies that the names are not the same and warns the user if they are. Amiga alternate usage: GET'FILES.

**QUICKSORT(REF array\$,first,last):** This is the familiar Quicksort PROC that has been published in COMAL Today several times. It very quickly sorts an array of strings. The sort can be confined to a range of the array starting with element <first> and ending with <last>.

**QUICKSORTNUM(REF array\$,first,last):** Like QUICKSORT, except this one sorts numeric arrays. The above PROC will correctly sort numeric arrays also if each number has the same number of digits.

**WAITKEY:** Pauses the program, prints a message telling the user to press a key to continue, then erases the continue message and continues the program.

**YES(prompt\$):** Used to get a YES or NO answer. For example:

```
IF yes("Quit now?") THEN END
```

It does not flash the cursor while awaiting input, but prints "YES" or "NO" at the current cursor position after the Y or N key is pressed.

**YES'AT(row,col,prompt\$):** Similar to YES, but positions a flashing cursor for you.

**CENTER(text\$):** Centers the string <text\$> on the current screen line. If more than 79 characters, the string is printed without centering.

**CENTER'AT(row,text\$):** This PROC centers the string <text\$> on row <row>. If more than 79 characters, the string is printed without centering.

**DELAY(seconds):** Exactly the same as the AmigaCOMAL built-in WAIT <seconds> or the IBM built-in PAUSE <seconds>. If both IBM and Amiga programs use DELAY, the programs will run unchanged on both IBM and Amiga. *[Why couldn't UniComal think of this!]*

The following are commands added to AmigaCOMAL by STANDARD that are already part of IBM COMAL:

**PAUSE:** Added for compatibility with IBM COMAL programs. It waits for a keypress and then clears the pressed key from the buffer. This is different from the Amiga keyword WAIT, which waits for a keypress but does NOT clear the keystroke from the buffer.

**LOWERS(text\$):** Converts the string <text\$> to lowercase ASCII characters.

**UPPERS(text\$):** Converts the string (<text\$>) to uppercase ASCII characters.

**INPUT'AT(row,col,maxlen,prompt\$,REF reply\$):** This is a replacement for the standard INPUT AT statement, which cannot read characters from the screen and does not allow editing the input field (except for backspace). This PROC allows you to cursor forward and backward through the input field, jump to the start or end, clear the field, insert characters, and even escape without entering anything.

The following command is added to IBM COMAL by STANDARD that already is part of AmigaCOMAL:

**WAIT:** Added for compatibility with AmigaCOMAL programs. It waits for a keypress and leaves that key in the buffer. Use PAUSE if you want the key that is hit to be cleared.

Some of these PROCs and FUNCs would not be difficult to code in machine language and make into a package for the C64 COMAL cartridge, so a C64 version of the Standard package may appear in a future issue of COMAL Today. The Caser package is a start (see page 43). If any readers have any other simple routines you would like to see in STANDARD, please send your suggestions to the COMAL Users Group.

The module/package listed below is for IBM PC COMAL. Notation was added for AmigaCOMAL users. The word CLOSED should be added to the end of every main PROC and FUNC header line for AmigaCOMAL (it is not allowed in IBM COMAL where it is assumed they are CLOSED.) AmigaCOMAL users could replace INPUT AT statements with better INPUT'AT statements using the routine written for the standard package by David Warman. STANDARD is on both the IBM and the Amiga Today Disk 27 ready to use.

```

MODULE standard //IBM only-Amiga does not need this line
EXPORT file'exists() // check if filename exists
EXPORT type() // type out contents of file
EXPORT clearkeys // clear keyboard buffer
EXPORT clearlines(,) // clear range of lines
EXPORT number() // test if string is valid num
EXPORT getkey$ // wait for & return keystroke
// (no cursor blink)
EXPORT getvalidkey$() // wait/return valid keystroke
EXPORT stripchar$(,) // strip specified character
// from string
EXPORT getinfile() // get input filename
EXPORT getoutfile() // get output filename
EXPORT getfiles(,) // get in/out filenames
EXPORT quicksort(,,) // fast string array sort
EXPORT quicksortnum(,,) // fast numeric array sort
EXPORT center() // center text on current line
// (like PRINT)
EXPORT center'at(,) // center text on specified
// line (cursor at end)
EXPORT waitkey // wait for key with message!
EXPORT wait // IBM only-wait for keystroke
// (keep key hit in buffer)
EXPORT yes() // ask a question, return TRUE
// for yes
EXPORT yes'at(,,) // ask a question at specified
// loc, TRUE for yes
EXPORT delay() // delay specified num of sec
EXPORT version'standard$ //show version information
//
//Amiga only PROC & FUNC follow (already in IBM COMAL)
//
//export upper$() // AMIGA only-convert string
// to uppercase
//export lower$() // AMIGA only-convert string
// to lowercase
//export pause // AMIGA wait for a keystroke
// & clearkeys
//export input'at(,,,) // AMIGA better editing of
// input field
//
//Amiga only alternative names for PROC & FUNC follow
//
//export clearkeys AS clear'keys //Amiga only
//export clearlines AS clear'lines //Amiga only
//export getvalidkey$() AS get'valid'key$ //Amiga only
//export stripchar$(,) AS strip'char$ //Amiga only
//export getinfile() AS get'infile //Amiga only
//export getoutfile() AS get'outfile //Amiga only
//export getfiles(,) AS get'files //Amiga only
//export input'at(,,,) AS inputat //Amiga only

FUNC version'standard$
RETURN " 1.17 Standard package by Lindsay & Warman"
ENDFUNC version'standard$

FUNC file'exists(filename$)
TRAP
f:=FREEFILE
OPEN FILE f,filename$,READ
CLOSE FILE f
RETURN TRUE
HANDLER
TRAP
CLOSE FILE f
HANDLER
NULL
ENDTRAP
RETURN FALSE
ENDTRAP
ENDFUNC file'exists

```



```

PROC type(filename$)
//DIM reply$ OF 1, a$ OF 1//<<<Amiga only/ not IBM
IF file'exists(filename$) THEN
f:=FREEFILE
OPEN FILE f,filename$,READ
WHILE NOT EOF(f) DO
a$:=GET$(f,1)
CASE ORD(a$) OF
WHEN 13 // cr
NULL // ignore them
WHEN 10 // lf
PRINT // go to next line
OTHERWISE
PRINT a$, // print all other characters
ENDCASE
reply$:=KEY$
IF reply$=CHR$(27) THEN //ESC key to end
CLOSE FILE f
PRINT
RETURN
ELSEIF reply$="" THEN //any key to pause
waitkey
ENDIF
ENDWHILE
CLOSE FILE f
ELSE
PRINT "File not found."
ENDIF
ENDPROC type

```

```

PROC clearkeys // clear keyboard buffer
WHILE KEY$="" DO NULL
ENDPROC clearkeys

```

```

PROC clearlines(row1,row2) //IBM version
FOR x#:=row1 TO row2 DO PRINT AT x#,1: CHR$(0)+
CHR$(117), //wrap line
ENDPROC clearlines //Amiga use CHR$(1), instead

```

```

FUNC getkeys //like KEY$ but no blinking cursor
clearkeys
REPEAT
reply$:=KEY$
UNTIL reply$>CHR$(0)
RETURN reply$
ENDFUNC getkeys

```

```

FUNC getvalidkey$(valid$)
clearkeys
REPEAT
reply$:=KEY$
UNTIL reply$ IN valid$
RETURN reply$
ENDFUNC getvalidkey$

```

```

FUNC stripchar$(text$,char$)
length:=LEN(text$)
IF text$=char$ THEN
RETURN ""
ELSEIF text$(length:length)=char$ THEN
RETURN stripchar$(text$(length-1),char$)
ELSE
RETURN text$
ENDIF
ENDFUNC stripchar$

```

```

PROC getinfile(REF infile$)
r:=CURROW
REPEAT
REPEAT
INPUT AT r,1: "Please enter the INPUT
filename: ": infile$,//wrap line
UNTIL LEN(infile$)>0 //must have some name

```

```

clearlines(r,r) // erase input line
IF file'exists(infile$) THEN
ok:=TRUE
ELSE
ok:=FALSE
PRINT AT r,1: "FILE NOT FOUND in directory!
Press a key to retry..."//wrap line
PAUSE
clearlines(r,r) // clear err msg
ENDIF
UNTIL ok
PRINT AT r,1: "INPUT filename is:":infile$
ENDPROC getinfile

```

```

PROC getoutfile(REF outfile$)
r:=CURROW
REPEAT
REPEAT
INPUT AT r,1: "Please enter the OUTPUT
filename: ": outfile$,//wrap line
UNTIL LEN(outfile$)>0 //must have some name
clearlines(r,r)
IF file'exists(outfile$) THEN
ok:=FALSE
PRINT AT r,1: outfile$,"EXISTS! Replace it?",
reply$:=getvalidkey$("YyNn")
clearlines(r,r) //erase msg
IF reply$ IN "yY" THEN ok:=TRUE
clearkeys
ELSE
ok:=TRUE
ENDIF
UNTIL ok
PRINT AT r,1: "OUTPUT filename is:":outfile$
ENDPROC getoutfile

```

```

PROC getfiles(REF infile$,REF outfile$)
row:=CURROW
REPEAT
CURSOR row,1
getinfile(infile$)
getoutfile(outfile$)
IF UPPER$(infile$)<>UPPER$(outfile$) THEN
ok:=TRUE
ELSE
ok:=FALSE
clearlines(row,row+1) //erase in & out lines
PRINT AT row,1: "File names must be different!
Press a key to retry ..."//wrap line
PAUSE
clearlines(row,row)
ENDIF
UNTIL ok
ENDPROC getfiles

```

```

FUNC number(text$) //returns TRUE if TEXT$ is a number
TRAP
x:=VAL(text$)
RETURN TRUE
HANDLER
RETURN FALSE
ENDTRAP
ENDFUNC number

```

```

PROC quicksort(REF a$(),m,n)
part(m,n,m,n)
PROC part(l,r,i,j)
p$:=a$((l+r) DIV 2)
REPEAT
WHILE p$>a$(i) DO i:=i+1
WHILE p$<a$(j) DO j:=j-1
IF i<=j THEN
swap(a$(i),a$(j))

```

```

        i:=i+1; j:=j-1
    ENDIF
    UNTIL i>j
    IF l<j THEN part(l,j,l,j)
    IF i<r THEN part(i,r,i,r)
ENDPROC part
PROC swap(REF a$,REF b$)
    buff$:=a$; a$:=b$; b$:=buff$
ENDPROC swap
ENDPROC quicksort

```

```

PROC quicksortnum(REF a(),m,n)
    part'num(m,n,m,n)
    PROC part'num(l,r,i,j)
        p:=a((l+r) DIV 2)
        REPEAT
            WHILE p>a(i) DO i:=i+1
            WHILE p<a(j) DO j:=j-1
            IF i<=j THEN
                swap'num(a(i),a(j))
                i:=i+1; j:=j-1
            ENDIF
        UNTIL i>j
        IF l<j THEN part'num(l,j,l,j)
        IF i<r THEN part'num(i,r,i,r)
    ENDPROC part'num
    PROC swap'num(REF a,REF b)
        buff:=a; a:=b; b:=buff
    ENDPROC swap'num
ENDPROC quicksortnum

```

```

PROC waitkey
    r:=CURROW; c:=CURCOL; msg$:="" << Press a key to
        continue >> //"wrap line
    PRINT CHR$(18)+msg$+CHR$(19)//IBM only
    //PRINT CHR$(16)+msg$+CHR$(16)//Amiga only
    PAUSE
    IF r=CURROW AND CURCOL<c THEN r:=r-1// screen scrolled
    PRINT AT r,c: SPC$(LEN(msg$)), // overwrites msg
    CURSOR r,c // back to where we started
ENDPROC waitkey

```

```

FUNC yes(prompt$)
    PRINT prompt$,
    reply$:=getvalidkey$("yYnN")
    IF reply$ IN "yY" THEN
        PRINT "YES"
    ELSE
        PRINT "NO"
    ENDIF
    RETURN reply$ IN "yY"
ENDFUNC yes

```

```

FUNC yes'at(r,c,prompt$)
    length:=LEN(prompt$); rr:=CURROW; cc:=CURCOL
    REPEAT
        INPUT AT r,c,1: prompt$: reply$,
        IF r=25 AND (LEN(prompt$)+c+1)>79 THEN
            NULL // screen scrolled ... skip this
        ELSE // erase the prompt and reply
            PRINT AT r,c: SPC$(length+1),
        ENDIF
    UNTIL reply$ IN "yYnN"
    CURSOR rr,cc
    RETURN reply$ IN "yY"
ENDFUNC yes'at

```

```

PROC center(text$)
    center'at(CURROW,text$)
    IF LEN(text$)<=79 THEN PRINT // new line
ENDPROC center

```

```

PROC center'at(row,text$)
    CURSOR row,1
    IF LEN(text$)>79 THEN
        PRINT text$
    ELSE
        PRINT TAB(1+((80-LEN(text$)) DIV 2)),text$,
    ENDIF
ENDPROC center'at

```

// The following two PROCs are for IBM only

```

PROC wait //IBM ONLY (built into AmigaComal)
    USE system //Keeps character hit in buffer
    REPEAT UNTIL peek#($41A)<>peek#($41C)
ENDPROC wait

```

```

PROC delay(seconds)//IBM version of DELAY
    PAUSE seconds //see below for Amiga version
ENDPROC delay

```

// The following five PROC/FUNC are for Amiga ONLY

```

PROC delay(seconds) CLOSED //Amiga only version
    WAIT seconds
    dummy$=key$ // clear key hit
ENDPROC delay

```

```

PROC pause CLOSED //Amiga only
    WAIT
    clearkeys
ENDPROC pause

```

```

FUNC lower$(text$) CLOSED // not needed for IBM
    FOR x:=1 TO len(text$) DO
        num:=ord(text$(x))
        IF num>=65 AND num<=90 THEN
            num:=+32
        ENDIF
        text$(x):=chr$(num)
    ENDFOR x
    RETURN text$
ENDFUNC lower$

```

```

FUNC upper$(text$) CLOSED // not needed for IBM
    FOR x:=1 TO len(text$) DO
        num:=ord(text$(x))
        IF num>=97 AND num<=122 THEN
            num:=-32
        ENDIF
        text$(x):=chr$(num)
    ENDFOR x
    RETURN text$
ENDFUNC upper$

```

```

PROC input'at(r1,c1,maxlen%,prompt$,REF text$) CLOSED
    IF r1=0 THEN r1:=currow //Amiga only
    IF c1=0 THEN c1:=curcol
    pos:=1 //position in input field
    IF len(text$)>maxlen% THEN text$:=text$(1:maxlen%)
    PRINT AT r1,c1: prompt$,text$,spc$(maxlen%-len(
        text$))//wrap line
    c1:=len(prompt$)
    REPEAT
        ln1:=len(text$)
        CURSOR r1,c1+pos!-1
        c$:=inkey$
        CASE true OF
            WHEN c$=chr$(21) //start of line
                pos:=1
            WHEN c$=chr$(22) //end of line
                pos:=ln1+(ln1<maxlen%)
            WHEN c$=chr$(25) OR c$=chr$(127) //del
                IF pos<ln1 THEN

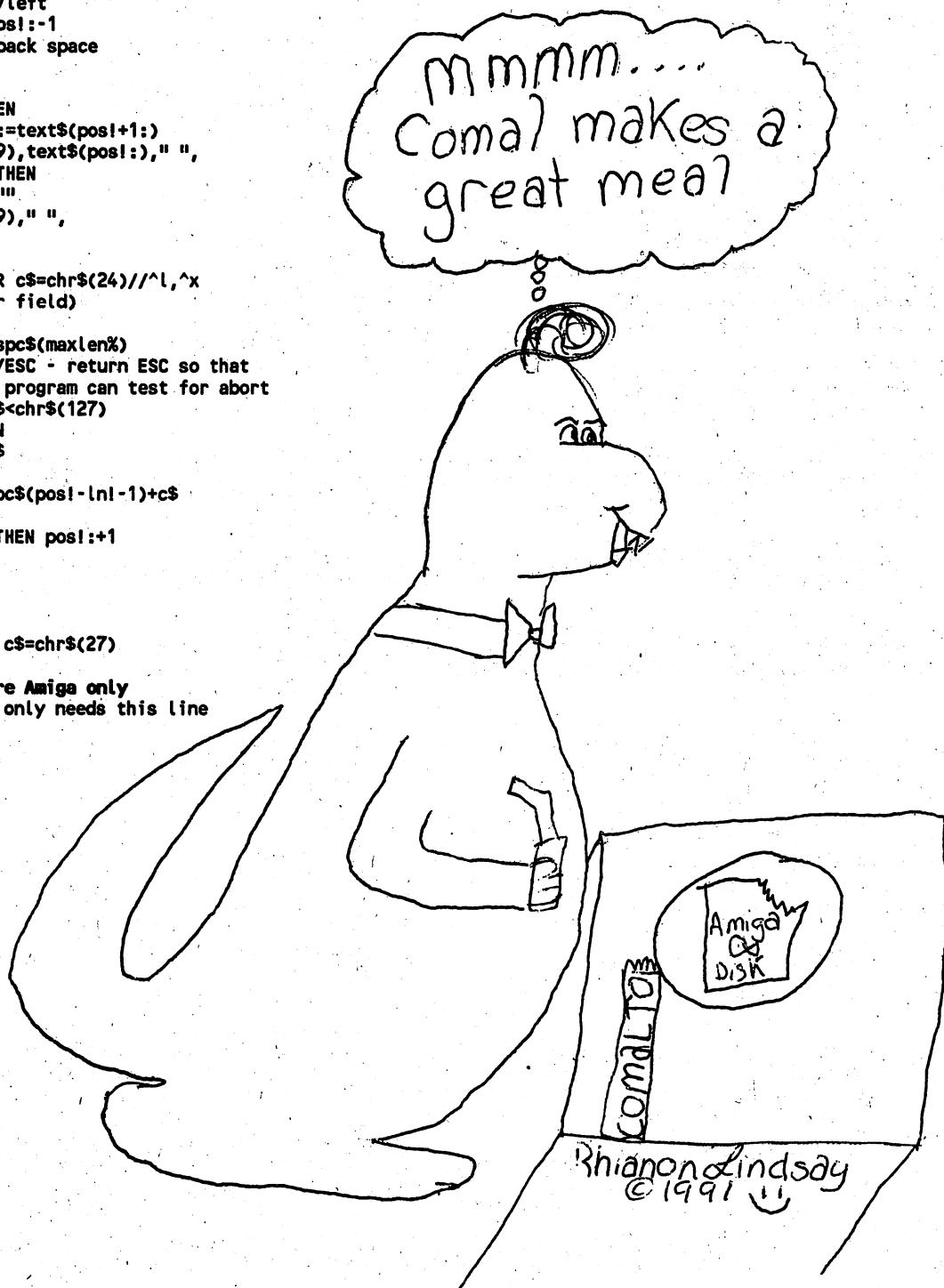
```

```

text$(pos!):=text$(pos!+1:)
PRINT text$(pos!)," ",
ELIF pos!=lnl THEN
text$(pos!):=""
PRINT " ",
ENDIF
WHEN c$=chr$(26) //insert
IF pos!<=lnl AND lnl<maxlen% THEN
text$(pos!):="" +text$(pos!:)
PRINT text$(pos!:)
ENDIF
WHEN c$=chr$(28) // right
IF pos!+(pos!=maxlen%)<=lnl THEN pos!:+1
WHEN c$=chr$(29) //left
IF pos!>1 THEN pos!:-1
WHEN c$=chr$(8) //back space
IF pos!>1 THEN
pos!:-1
IF pos!<lnl THEN
text$(pos!):=text$(pos!+1:)
PRINT chr$(29),text$(pos!)," ",
ELIF pos!=lnl THEN
text$(lnl):=""
PRINT chr$(29)," ",
ENDIF
ENDIF
WHEN c$=chr$(12) OR c$=chr$(24)//^l,^x
pos!:=1 // (clear field)
text$=""
PRINT AT rl,cl: spc$(maxlen%)
WHEN c$=chr$(27) //ESC - return ESC so that
text$:=c$ // the program can test for abort
WHEN c$>="" " AND c$<chr$(127)
IF pos!<=lnl THEN
text$(pos!):=c$
ELSE
text$:=text$+spc$(pos!-lnl-1)+c$
ENDIF
IF pos!<maxlen% THEN pos!:+1
PRINT c$,
OTHERWISE
NULL
ENDCASE
UNTIL c$=chr$(13) OR c$=chr$(27)
ENDPROC input'at
//The 5 above routines are Amiga only
ENDMODULE standard //IBM only needs this line

```

## Even modern age dinosaurs love COMAL...



# \$1.95 each - 550 Disks Of Amiga Programs

Anyone who uses an Amiga should know about the collection of great public domain and shareware programs referred to as FISH DISKS. There are now 550 disks in the collection. Every one of them is available from COMAL Users Group, U.S.A., Ltd for just \$1.95 each. And that includes UPS shipping! You won't find a bargain like that often.

Currently, we are including a custom laserset label with each disk. This label is designed to wrap over the top of the disk putting the disk name/number across the thin disk top ... then on the front of the disk the programs are listed. These are the same FISH DISKS you see sold elsewhere for much more money ... and they don't include a custom label! (note: the labels may be discontinued without notice if demand gets to high)

Help support the COMAL Users Group and at the same time get disks full of software for your Amiga. Order a set of FISH DISKS today. The easiest way to order them is to simply list the Fish Disk numbers on a blank sheet of paper. Then count how many and multiply times \$1.95. Finally include your name/address and Visa/MC info (or include your check with it). Shipping via UPS is included in the price. Add 25¢ if you need them shipped First Class mail.

The back cover of this issue gives a listing of all the programs included on the first 510 FISH DISKS. Some programs are updated every now and then, and in those cases, all disk numbers that the program appeared on are listed. In most cases, you will only need the latest disk.

After Jesse Knight produced the chart for our back cover (using COMAL programs of course), 40 more disks were released! (They are released in sets of 10 as new programs are available to be included on them.) The following pages describe the

programs that are on those latest 40 disks. Read over the program summaries and you will undoubtedly find programs you could use!

You can keep up to date on the latest FISH DISK releases by checking the back pages of Amazing Computing magazine. (Then decide if you want to pay their price of about \$5 per disk or get the same disks from us for \$1.95 each.)

You also can order a FISH Catalog disk for \$1.95. It has the contents for the full set of Fish Disks as text files.

If you have a VISA or MC charge card, we also have a special service that will ship you new FISH DISKS as they are released, and bill you as they are shipped to you (usually in groups of 10). The price is the same, just \$1.95 per disk. This is our FISH DISK subscription. Just tell us what disk to start with, give us your charge card number and expiration date, promise to advise us anytime your charge card changes (get a new card or an updated expiration date), and give us at least a two week notice any time you wish to discontinue the subscription service.

## FISH TO GO #511

**Connex:** A "connect-4" type game. This is version 4.0, an update to version 3.8 on disk 493. Shareware, binary only. Author: Adrian Millett

**DirWork:** A fast, small, simple, efficient, shareware DirUtility that gets directories off floppies in about half the normal time. Configurable options and buttons, as well as all the usual features. This is Version 1.31, an update to version 1.30 on disk 508. Shareware. Binary only. Author: Chris Hames

**Less:** A text file reader, descended from Unix "Less." Less has features found on no other Amiga file reader; it can use pipes, accepts multiple filenames, and has many convenient positioning commands for forward and backward movement, marking positions, etc. This version runs on all Amigas, under any screen resolution and font, and uses the full 8-bit character set. Other improvements

include searches using regular expressions, multiple file selection from Workbench, and resident operation. This is version 1.4Z, an update to version 1.3 on disk 149. Includes source. Author: Ray Zarlring et. al.

**OneKey:** A 1.3/2.0 compatible input handler for people who can only press (or cause to be pressed) one keyboard key at a time. OneKey gathers individually pressed qualifier keys (shift, alt, control, etc) and then applies them to the next nonqualifier key that is pressed. This is version 36.11, includes source. Author: Carolyn Scheppner

**PCQ:** An update to PCQ from disk 503. This is only a partial distribution and includes just the compiler main pass, the documentation, and a ReadMe file. You need the distribution from disk 503 to use this material. This update is version 1.2b. Author: Patrick Quaid

**Solitaire:** A shareware solitaire game, known widely as Klondike. The rules can be varied, and there are five different ways of working through the deck. Also includes a palette requester to fine tune the colors to your liking and a save-setup function that remembers how all the options are set. This is version 1.8, binary only. Author: Gaylan Wallis

## FISH TO GO #512

**Csh:** Replacement for the Amiga shell, similar to UN\*X csh. Main features include over 100 built in commands, 70 functions, new system variables, file name completion, freely programmable command line editing, file classes, auto cd, lazy cd, intuition menus for the shell window, automatic RX-ing, local variables, \$( ), statement blocks, high speed, plus much more. This is version 5.15, an update to version 4.02 on disk 458. Includes source. Author: U. Dominik Mueller, C. Borreo, S. Drew, M. Dillon

**FlipIt:** Possibly the strongest Reversi/Othello type game available. Shareware, binary only. Author: Adrian Millett

**M2Pascal:** A simple Modula-2 to Pascal translator. You can write simple programs on your Amiga using one of the available Modula-2 compilers, and then use this translator to generate Pascal source for export to other systems with Pascal compilers. Version 1.0, includes source in Modula-2. Author: Greg Mumm

**Solitaire:** Yet another solitaire game. Nicely done with good graphics and sound. Shareware. Author: Pat Clark

\$1.95 per disk from: Fish To Go, 5501 Groveland Terrace, Madison, WI 53716

## **FISH TO GO #513**

**DKBTrace:** A freely distributable raytrace program that takes a text description of a 3D scene and renders it to a 24-bit file which may be converted to HAM or viewed on an 24-bit card. The program features sophisticated textures, constructive solid geometry, and various graphics primitives such as quadrics (cones, cylinders, etc.), spheres, planes, triangles, smooth triangles, and quartics (donuts, etc.) Also included are many sample data files and many utilities for creating new data files and for post-processing the output files. Source and executables are included. Because of its size, the distribution has been split onto two disks. Disk 513 contains the raytracer and disk 514 contains the utilities. This is version 2.12, an update to version 2.0 on disk 397. Author: David Buck

**NewList:** A powerful LIST command. Supports many features including sorts, character filters, case sensitivity, most options offered by LIST, date construction, UNIX wildcards, and much more. Sort routines are very fast and memory usage is minimal. Version 5.0a, an update to version 5.0 on disk 501. New features include recursion, hunt mode, custom formatting, multiple paths, paging, and much much more. Binary only. Author: Phil Dietz

## **FISH TO GO #514**

**DKBTrace:** A freely distributable raytrace program that takes a text description of a 3D scene and renders it to a 24-bit file which may be converted to HAM or viewed on an 24-bit card. The program features sophisticated textures, constructive solid geometry, and various graphics primitives such as quadrics (cones, cylinders, etc.), spheres, planes, triangles, smooth triangles, and quartics (donuts, etc.) Also included are many sample data files and many utilities for creating new data files and for post-processing the output files. Source and executables are included. Because of its size, the distribution has been split onto two disks. Disk 513 contains the raytracer and disk 514 contains the utilities. This is version 2.12, an update to version 2.0 on disk 397. Author: David Buck

**GearCalc:** A bicycle gear ratio calculator. Version 2.0, binary only. Author: Ed Bacon

**S220to8SVX:** Converts sound samples from a Roland S-220/S-10/MKS-100 to 8SVX IFF 8-bit samples. This is version 1.4, an update to version 1.0 on disk 286. New features include volume-adjust and start-endpoint setting. Includes source in assembler. Author: Dieter Bruns

**TLog:** An intuition based program that records statistics to monitor athletic training

progress. Maintains a daily record of distance, time, heart rate, weight and temperature. Links a text file with the record for a free form diary. The AREXX commands provide the basis for generating custom reports from the data base. Sample script allows TLog to automatically get to a scheduler to post reminders of upcoming events. Version 1.0, shareware binary only. Author: Ed Bacon

## **FISH TO GO #515**

**CheckBook:** Checkbook Accountant is a checkbook recording, balancing, budgeting, and analyzing program. Intended to be used as a companion to a checkbook register and not as a replacement, this program offers a simple way of balancing checkbooks, tracking bank transactions, and recording and analyzing budgeted transactions. This is version 2.0, an update to version 0.9 on disk 425. Some of the new features include: Sort, Move, Duplicate, Program Prefs, Recurring Transaction Groups, Statistics, and Search & Replace. AmigaDOS 1.3 or Release 2 required. Binary only. Author: Jeffrey R. Almasol

**D110EdDemo:** Demo version of an editor for Roland D-110. Bulk dump is available. Edited parameters are not submitted to Roland D-110. Author: Dieter Bruns

**PP:** Powerpacker patcher is a small tool that patches the DOS library so that PowerPacker datafiles will start acting as if they were "normal" files. Sample use of PP would be to crunch all your .info files. They will still retain their functionality as long as PP is installed, and WB will never know the difference. Icons are useful, but take up a lot of valuable disk space. You may also use any text viewer or editor you desire directly on Powerpacker files! Version 1.0, shareware, includes source. Author: Michael Berg

**SetCCOPTS:** Lets you easily deal with the MANX 'CCOPTS' environment variable. You can store settings to disk. Has a complete intuition interface. This is version 1.00, binary only. Author: Stephan Flother

## **FISH TO GO #516**

**Enigma:** An interactive animation object that can be viewed as a puzzle or a game object. The Enigma! Machine can be programmed by the user to generate text. Part of the challenge is to discover how to program it to generate meaningful output. Version 1.00, binary only. Author: Martin C. Kees

**Loom:** Simulation of an eight harness loom. Supports 15 colors for warp and weft threads. Scalable display. Patterns created can be printed in draft format or saved as

IFF files. Version 1.00, binary only. Author: Martin C. Kees

**PhoneGram:** Generates text from phone numbers. Attempts to find all three and four letter words encoded by any phone number. Graphic keypad display with sound. Version 1.01, binary only. Author: Martin C. Kees

**Quotes:** Quotes is a pseudo random quote generator. It will scan a specified file of quotes, pick one at random, and display it. Great for startup-sequences. CLI only. Version 1.0, includes source. Author: Adam Evans

**RexxView:** Monitors messages sent to the REXX port. Messages are described by task, action code and modifiers, and the contents of arg0 slot is displayed. CLI utility to monitor the REXX IPC hub for Arexx programmers and interfacers. Version 1.01, includes JForth source. Author: Martin C. Kees

**XI:** Demo version of a single bit-plane cell animation generator. Uses an onionskin display to rough in an animation sequence. Has a large ARexx command set, multiple precision bezier curves and splines, scalable and rotatable polygons, brush support with blitter logic, turtle graphics and macro key definitions. Requires req.library (Fox/Dawson). Nonsaving demo version, binary only. Author: Martin C. Kees

## **FISH TO GO #517**

**Aequipot:** A program that renders multicolor pictures using an algorithm based on electrostatic effects. Renders in low-res, in high-res, and in two speed/quality modes. Includes both PAL and NTSC versions, English and German docs. This is version 1.15, an update to version 1.06 on disk 474. Now supports saving pictures in IFF-ILBM format and animation rendering via script files. Freeware, includes source in PCQ. Author: Juergen Matern

**AmiBack:** Demo version of a new backup utility. Features include backup to any AmigaDOS compatible device (such as floppies, removable hard disks, fixed media hard disk, and tape drives), no copy protection, configuration files, complete backups, incremental backups, selective backups, file exclusion filter, setting of archive bit, etc. Demo version does not have restore, compare, or scheduler. Version 1.04, an update to version 1.03 on disk 493. Binary only. Author: MoonLighter Software

**CWToy:** A program like Say or SpeechToy that allows your Amiga to communicate in International Morse Code. A lot of nice features for code practice or with a simple hardware interface even useful as a



keyboard program for your transmitter. Version 1.0, includes source in C. Author: Rob Frohne

**Hex:** A file based binary file editor with lots of features. Version 1.0, shareware, binary only. Author: Nicola Salmoria

**RussianFonts:** Russian Fonts ranging from 13 points to 31 points. Author: Daniel Amor

**Spliner:** A spline screen blanker commodity, derived from the spline code extracted from Tom Rokicki's Mackie and encapsulated into a standard AmigaDOS 2.0 commodity. Binary only. Author: Tom Rokicki, Sebastiano Vigna

#### FISH TO GO #518

**AmiDock:** AmiDock is an Amiga version of the NeXT's Dock facility. It will open up a small window on your WorkBench full of little IFF brushes. Each brush represents an application, like an ICON, but it's a brush. Click on the brush and your application will start. This is version 1.3, an update to version 1.2.4 on disk 474. Shareware, binary only. Author: Gary Knight

**Lister:** Program to display information about files in various types of archives, such as arc, cpio, lharc, tar, zip, and zoo. Version 1.0, includes source. Author: Kerry Cianos and Geoffrey Faivre-Malloy

**Post:** An excellent PostScript interpreter for the Amiga which implements the full Adobe language. Supports type 1 and type 3 fonts, screen output, file output, and printer output. Requires Arp library V39+ and ConMan V1.3+. This is version 1.6, an update to version 1.5 on disk 468. Includes source in C. Author: Adrian Aylward

#### FISH TO GO #519

**AVLSort:** A text file sort program, based on a general purpose AVL package by Mark Mallett (included). Handles as many lines as will fit in memory. Includes source. Author: Robert Pyron, Mark Mallett

**ChkFrag:** A program that reports on the extent of file fragmentation in any specified directory tree. Binary only. Author: Timeus

**FifoLib:** FIFO: is like PIPE: but is based on fifo.library rather than its own implementation. Fifo.library is a general fifo library implementation that supports named fifos, writing to a fifo from a hardware exception, multiple readers on a fifo with each getting the same data stream, efficient reading, and automatic or manual flow control. Programs that require nonblocking IO can access one side of a FIFO: connection via the fifo.library instead of the FIFO: device. Version 3.1, an update to

version 2 on disk 448. Includes some source. Author: Matt Dillon

**OakLisp:** A straight port of the OAKLISP system to the Amiga. OAKLISP is a Scheme-like LISP with an object-oriented base. An R3RS Scheme environment is included in the package. Because of its size, the distribution is made on two disks, 519 and 520. Both disks are required. Source is included. Author: Kevin Lang, Barak Pearlmuter, ported by Mike Meyer

**Optimizer:** A disk optimizer that works on floppy disks, hard disks, and ram disks. It is designed to provide safe optimization, moving only one block at a time. Version 1.0, freeware, binary only. Author: Tim Stotelmeyer

#### FISH TO GO #520

**IOBoard:** Full plans for a public domain hardware project which adds two parallel ports and two serial ports to an Amiga 500, 1000, or 2000, for less than \$100, with the capability to upgrade to four ports of each type at any time. Includes serial and parallel drivers with source code. Version 2.10. Author: Jeff Lavin, Dan Babcock, Paul Coward

**OakLisp:** A straight port of the OAKLISP system to the Amiga. OAKLISP is a Scheme-like LISP with an object-oriented base. An R3RS Scheme environment is included in the package. Because of its size, the distribution is made on two disks, 519 and 520. Both disks are required. Source is included. Author: Kevin Lang, Barak Pearlmuter, ported by Mike Meyer

#### FISH TO GO #521

**A68k:** A 68000 assembler originally written in Modula-2 in 1985 and converted to C by Charlie Gibb in 1987. Has been converted to accept metacomco-compatible assembler source code and to generate Amiga objects. This is version 2.71, an update to version 2.61 on disk 314. Include source. Author: Brian Anderson; C translation and Amiga work done by Charlie Gibb

**BatchMaster:** A program that makes creation of interactive command scripts a lot easier. It works as commands ASK, IF and SKIP together, only better. You can have up to four options to skip to, and select them with a mouse, as BatchMaster has an Intuition interface. This is version 1.27. Requires arp.library. Binary only. Author: Janne Pelkonen

**CheckPrt:** A small program for checking the presence of a parallel printer from within a script file. Update of version on disk 479. Now also includes two small tools to test the state of some lines of the printer port, to

make it easier to find the source of printer problems. Binary only. Author: Tom Kroener

**K1:** An editor program for the Kawai K1-II synthesizer. Includes a bankloader for single-patches and multi-patches, a single-patch editor, a multi-patch editor, and support for the effect-session and K1 controllers. Version 5.1, an update to version 4.8 on disk 481. Binary only. Author: Andreas Jung

**LandScape:** A simple CAD program to aid in designing garden layouts. First the plan is laid out, placing lawns, paths, plants, etc., and the program then draws a '3D' picture of what the garden might look like in real life, from any viewpoint. Version 1.0, binary only. Author: Steve Goddard

**SynthSong:** A song created using the freely distributable program MED V.3.00. Although quite small (63k) on disk, this one expands in memory once loaded, lasting almost 65 minutes. Player program included. Author: Alex Van Starrex

**T3E:** Converts any text file to an executable. The resulting program will only have a minimum of bytes appended (94 bytes for hunk structure and display program). The text file is not limited by the size. Freeware, with source in C. Author: Garry Glendown

#### FISH TO GO #522

**MAK:** The Mandelbrot Adventure Kit is a nicely done mandelbrot generator with full source code (about 18,000 lines of C code). Includes some sample images along with the parameters used to generate them, and lots of built-in help screens. Author: Steven Dillon

#### FISH TO GO #523

**BMake:** A GNU Make subset. Includes pattern rules, conditionals, "include", function calls, etc. This is Version 1.4, with source. Author: Ben Eng

**Conquest:** Lore of Conquest is a war game similar in concept to the board game Risk. You are the lord of an entire world, destined to rule the galaxy. Some worlds are virgin fruits, ready for you to colonize. Some worlds have natives who do not wish to accept your rule, these you must conquer for they will yield more valuable resources. As you claim the galaxy you will find, you are not the only one extending your dominion. This is a two player game, so be prepared to defend yourself and take what is yours! Version 1.5, an update to version 1.3 on disk 459. Binary only, shareware. Author: Michael Bryant

**PSGraph:** A graphing program with plot previews and encapsulated postscript output. Version 1.0, binary only. Author: Rick Golembiewski

**ScreenJaeger:** A screen capture program that works by scanning through memory, allowing you to grab screens from programs that don't multitask, and save them as IFF files. Features include an Intuition interface, multiple bitplanes, support of all Amiga display modes and resolutions, CHIP and FAST memory, overscan, and both NTSC and PAL. This is version 1.0, includes full C source. Author: Syd L. Bolton

**SerLib:** A shared library providing easy access to any serial device. Allows both synchronous and asynchronous access to the port. With support code for Lattice, Manx and Oberon. Includes examples in both C and Oberon (with source) and docs in ASCII, DVI, and PostScript. Shareware. Author: Garry Glendown, Oberon interface by Frank Schummert

#### FISH TO GO #524

**Kamin:** Various interpreters from the book "Programming Languages, An Interpreter Based Approach", by Samuel N. Kamin. This distribution includes lisp, apl, scheme, sasl, clu, prolog, and smalltalk interpreters, automatically translated from Pascal to C using p2c. Includes C and Pascal source. Author: Samuel Kamin

**Snap:** A tool for clipping text or graphics from the screen, using the clipboard device. Snap finds out character coordinates automatically, handles different fonts, keymaps, accented characters, and more. Version 1.62, an update to version 1.4 on disk 326. Includes source. Author: Mikael Karlsson

**TAPDemo:** Tumble Axis Processor is a Sculpt utility with several functions, including automatically aligning a path's tumble axes so that an object following that path will always face the direction of travel, and production of an easy to read data list containing the location of each node and the orientation of each of its tumble axes. This is a fully functional version except that it will not function on paths with more than 15 nodes. Binary only. Author: Martin Koistinen

#### FISH TO GO #525

**CreLists:** Complete CRC check files for disks 401-520 using the brik program. These were made directly from my master disks. Along with the crc lists from disk 401, these lists will allow you to check all of the disks in the library to make sure they are correct and complete. Author: Fred Fish

**DumpHarpoon:** Program that dumps the .DAT data files for the game HARPOON. Author: Mark Kyprianou

**MinixDemo:** Demo version of minix 1.5, an operating system very similar to UNIX. The full version of minix comes with source code for the kernel and most of the utilities. Binary only. Author: Andrew Tanenbaum, et. al.

**SIOD:** A small scheme interpreter (Scheme In One Defun) which can be used for calculations or included as a command interpreter or extension/macro language in other applications. This is version 2.4. Includes source. Author: George Carrette

#### FISH TO GO #526

**DataEasy:** An easy-to-use data base program which includes a phone dialer, speech output, a simple screen editor for making and modifying the database definitions, a screen print function, form letter printing, sorting, searching, and two small sample databases. Version 1.3, an update to version 1.1 on disk 417. Binary only, source available from author. Author: J. Dale Holt

**GNUPlot:** An interactive function and data plotting program which supports a great number of output devices. Includes extensive online help. Version 2.0, patch level 2. Includes full source along with diffs and patch program to generate Amiga version. Author: Thomas Williams, Colin Kelley, Carsten Steger, Russell Lang, Dave Kotz, John Campbell

#### FISH TO GO #527

**Arq:** Replaces the standard system requesters with nice animated requesters which you can also attach different sounds to. Works under AmigaDOS 1.3 or 2.0 to give all the normal system requesters a nice new look. Version 1.61, binary only. Author: Martin Laubach, Peter Wlcek, and Rene Hexel

**Lister:** Program to display information about files in various types of archives, such as arc, cpio, lharc, tar, zip, and zoo. Version 1.01, an update to version 1.0 on disk 518. Includes source. Author: Kerry Cianos and Geoffrey Faivre-Malloy

**MightyMouse:** A very small screen blanker, mouse accelerator, mouse blanker, hot key, etc. utility. Version 1.05, binary only. Author: Bob Stouder

**PicBase:** A program that allows the user to organize and manage all IFF images and brushes stored on disk. Displays a miniature monochrome (8 or 16 level) image of each file, with information such as the full pathname, the creation date, file size, image size and depth, display mode, and filename.

The images are displayed four at a time and can be scrolled in realtime, manually or automatically sorted, presented as a slideshow, and more. Version 0.36, shareware, binary only. Author: Mike Berro

**SRegExp:** A runtime library of routines for doing wildcard pattern matching and wildcard path matching. It accepts a slight extension of the AmigaDOS wildcard syntax, including a "not" operator and character sets. This is version 11.1.1, includes source. Author: Jon Spencer

**ToolManager:** ToolManager is a full featured program to add programs (either WorkBench or CLI) to the tools menu of the 2.x WorkBench. Programs can be added by dragging their icons onto the ToolManager "config" window or the optional ToolManager icon or by editing the config file. Requires Workbench 2.0. This is version 1.4, an update to version 1.3 on disk 476. Includes source. Author: Stefan Becker

**Zoo:** A file archiver, much like "arc" in concept, but different in implementation and user interface details. Version 2.10, an update to version 2.00 on disk 164. New features include greatly improved compression, preservation of full pathnames by default, and extended multi-screen help. Binary only. Author: Rahul Dhesi, Amiga port by Brian Waters

#### FISH TO GO #528

**AmiOmega:** Amiga port of the Omega game. Omega is similar to hack or rogue, but is much more complex. There is a city, several towns, a wilderness, lots of dungeons, a multitude of monsters, lots of spells, magic items, etc. There are several quests to complete. All in all, it is an excellent game. This is version 1.5, a different port than version 1.0 on disk 320. Binary only. Author: Laurence Brothers, Amiga port by Klavs Pedersen

**CpuBlit:** CpuBlit replaces the system BitBlitMap routine with a version that uses your 68020/68030 when it is worthwhile to do so. This results in text scrolling twice as fast as usual, and in addition, the color flicker effect normally present when scrolling multicolor text is removed. Version 1.0, includes source. Author: Eddy Carroll

**FontConv:** Converts MacIntosh Postscript type 1 and type 3 fonts to the IBM Postscript type 1 and type 3 format. Also converts MacIntosh bitmap screen fonts to the Adobe binary format (abf). Version 1.2, binary only. Author: Gary Knight

**KeyMenu:** An alternative to Intuition's method of menu selection via the keyboard. Uses one key to activate the menu for the currently active window, the cursor keys to

move through the menu as you choose, and the return key to select the desired menu item or escape key to abort selection. Works with AmigaDOS 2.0 mouse accelerator and has option to blank Intuition's pointer. Version 1.05, an update to version 1.03 on disk 470. Includes assembly source. Author: Ken Lowther

**SimSmart:** A general purpose utility that prints the program source code of almost any language, so that (for example) the keywords are emboldened and underlined, and the comments are italicized. These features are adjustable by the user, to suit individual taste. Tabbing also is adjustable, to harmonize with the nesting depth of a particular program. Output may be either on the printer, the screen, or to another file. SimSmart may easily be extended by the user to deal with extra languages. Version 2.10, shareware, binary only. Author: David Simon

#### FISH TO GO #529

**ClockDJ:** A utility which combines a clock, mouse accelerator, screen blanker, window manipulator, function keys, and macros into a single program, written in assembly language for maximum efficiency. Includes an ARExx port. Version 5.02, an update to version 4.07 on disk 293. Binary only. Author: David Jenkins

**MonkeyDemo:** Demo version of the LucasFilm game "The Secret of Monkey Island". Installable on a hard disk and multitasks as well. Binary only. Author: LucasFilms

**TownMaze:** A program that designs a town shaped maze like the town "Bard's Tale I" uses. Version 1.2, includes source. Author: Kent Paul Dolan

#### FISH TO GO #530

**DeckBrowser:** A freely redistributable player for unbound CanDo decks. Version 1.5, binary only. Author: INOVAtronics

**Dme:** Version 1.45 of Matt's text editor. Dme is a simple WYSIWYG editor designed for programmers. It is not a WYSIWYG word processor in the traditional sense. Features include arbitrary key mapping, fast scrolling, title line statistics multiple windows, and ability to iconify windows. Update to version 1.42 on disk number 441, includes source. Author: Matt Dillon

**TurboTitle:** A program created for the purpose of subtitling Japanese animation films and to create a standard Amiga subtitle format. Is perfectly suited for subtitling any foreign film. Version 0.80, an update to version 0.71 on disk 424. Shareware, binary only. Author: Robert Jenks

#### FISH TO GO #531

**CaligariDemo:** Demo version of Caligari 2.0 from Octree Software. Requires a 68020/68030 and a 68881/68882. Binary only. Author: Octree Software

**DisDF:** Program to disable DF0-DF3 to stop that empty drive clicking by putting the trackdisk.device tasks in a removed state. Can be run from CLI, startup script or WB. Command line options select drives and also remove the File System tasks to reduce CPU load a little more. Version 1.0, includes source. Author: Patrick F. Misteli

**FileSearch:** This program will search an AmigaDOS volume for a specified file, using a filename pattern. Useful for hard drive owners wanting to find a file/program quickly. AmigaDOS wildcards aren't supported, "" wildcards are. Has an Intuition interface. Version 1.5, binary only, WB2.0 only. Author: Matt Crowd

**Graffiti:** Demo version of an art program, with a feature set somewhat less than DPaint but more than many other such programs. Has a few special functions included like autoscrolling, converting screens to other resolutions, changing RGB values of the whole screen, fast autoscrolling magnifier and many others. Version 1.01, binary only. Author: Marcus Schiesser

**PopulousKeys:** Code words and options descriptions for all 495 worlds of Populous (TM Electronic Arts and Bullfrog Productions). All information was obtained by the author's excessive playing of Populous. Author: Kenneth Fuchs

#### FISH TO GO #532

**BootPic:** BootPic allows you to install nearly any IFF picture that you like in place of the WorkBench hand that appears after a reset. Version 1.1, an update to version 1.0 on disk 484. Now includes an Intuition interface. Binary only. Author: Andreas Ackermann

**DataPlot:** A program that plots data and algebraic functions in 2D. The user simply clicks on an option screen to select various options, such as type of marker, log or linear axis, auto vs manual scaling, grid lines. The macro language makes similar, repetitive plots easy to do. Data points can be transformed by an algebraic function prior to plotting. A macro can be automatically executed upon start-up. Plots in any resolution from 320x200 to 640x400. Plots can be saved as macro commands and IFF ILM files. Prints directly to Epson compatible printers, or to any Preferences supported graphics printer via the PLT device. This is version 2.1, a significant

upgrade to version 1.0 on disk 121. Shareware, binary only. Author: Dale Holt

**SCSIMounter:** An interactive, fully automated partition mounter especially suited for removable media SCSI drives. SCSIMounter automatically scans the Rigid Disk Block of the drives and presents the user with a partition selector which allows the individual selection of the partitions to mount. Requires Kickstart 2.0. Binary only. Author: Martin A. Blatter

**SCSIPrefs:** A Preferences editor for the battery backed up memory in the Amiga 3000. This small program allows you to change the bits that control some parameters of the embedded SCSI host adaptor. Requires Kickstart 2.0. Binary only. Author: Martin A. Blatter

**TrainerMaker:** A program that allows you to modify money, number of lives, or high scores of some games. The game to be modified must be capable of multitasking. Version 0.8, binary only. Author: Andreas Ackermann

#### FISH TO GO #533

**BootGen:** This program creates a bootmenu. You simply enter the name of ten programs and the program will do the rest. When you boot the disk a menu will appear where you can choose one of ten program names, which automatically will be loaded. Version 3.4, binary only. Author: Frank Enderle

**Conquest:** Lore of Conquest is a war game similar in concept to the board game Risk. You are the lord of an entire world, destined to rule the galaxy. Some worlds are virgin fruits, ready for you to colonize. Some worlds have natives who do not wish to accept your rule, these you must conquer for they will yield more valuable resources. As you claim the galaxy you will find, you are not the only one extending your dominion. This is a two player game, so be prepared to defend yourself and take what is yours! Version 1.6, an update to version 1.5 on disk 523. Includes enhanced galaxy map, instant replay option, timed turns, symmetrical universe, and more. Binary only, shareware. Author: Michael Bryant

**Convert:** Converts an object file to a C source which can be inserted with '#include' in your own programs. Version 1.0, includes source. Author: Frank Enderle

**DosManager:** You can copy, delete, move, view, show as pictures, play as samples, rename, ... , files with this program. It is also possible to program a personal command with DosManager. This is version 1.0, shareware, binary only. Author: Jurgen Stohr

**Icons:** A bunch of 8-color icons for systems running AmigaDOS 2.0. Previously released 8-color icons from the author appeared on disk 213. Author: Wolf-Peter Dehnick

**OctaMEDDemo:** Player program and sample songs for OctaMED, a special version of MED that can play 8 tracks at once on a standard Amiga without extra hardware. The sound quality is not as high as with 4-channel sound but is good enough for many purposes. Binary only. Author: Amiganuts United

**VTest:** A simple example how to test if the AMIGA is infected by a Virus. It simply checks some vectors in the Exec Base structure and some library routines like DoIO. Version 1.0, includes source. Author: Frank Enderle

#### FISH TO GO #534

**Term:** A giftware telecommunications program written for AmigaOS release 2.x (Kickstart 37.74 and Workbench 37.33 or higher required, Kickstart 37.175 and Workbench 37.52 recommended). Features include total configurability, full ARexx control, Xpr-transfer-support, filetype identification after download, cut & paste/point-and-click on screen, auto up- and download, scrollable review buffer of unlimited size, solid and fully featured VT100/VT220/ANSI emulation, optional fast atomic terminal emulation, hotkey support, powerful phonebook and dialing functions, ability to save and print the contents of the screen as IFF-ILBM or ASCII file, full overscan and screen resolution support (new ECS screen modes included), asynchronous operation and a lot more. Comes with six Xpr-transfer libraries (ascii, jmodem, kermit, quickb, xmodem & zmodem) and documentation both in German and in English. This is version 1.8a and also includes the full 'C' and assembly language source code. Author: Olaf 'Olsen' Barthel

#### FISH TO GO #535

**Accent:** A universal accented character converter for Amiga, IBM PC, Macintosh, and C64 files written in most West European languages (Danish, Finnish, French, German, Italian, Icelandic, Norwegian, Spanish, Swedish, and more. Works with either ASCII or Word Perfect files. This is a major update to version 1.5 on disk 454 (where it was called Vortex). New features include a graphical user interface, simple file reader, and copy option. Binary only. Author: Michel Laliberte

**AreL:** A utility that lists your ZOO, ARC and LZH Archives with automatic type detection. Includes german version and

documentation. Version 1.0, binary only. Author: Oliver Graf, T.O.M. Software

**BlzCalc:** A do-it-all user friendly loan calculator that calculates weekly and biweekly loans. Can generate amortization tables to the screen, to the printer, or to a file. Uses menus, buttons, or keyboard commands, and iconifies. Has six decimal precision option and more. This is version 1.2, an update to version 1.1 on disk 493. Binary only. Author: Michel Laliberte

**Flat:** A filing system handler which implements block-mapped filing devices such as available under Un\*x. Read and write calls are mapped to low level system IO operations which allow to treat devices such as df0, dh0, rad, etc. as big data files. These 'virtual' files can be copied, read and written just like any standard AmigaDOS file. It is even possible to copy a whole disk with the CLI 'Copy' command or to archive disks with LhArc and the like. Written as a supplement for the Amiga 'tar' program. Version 1.3, includes source in 'C'. Author: Olaf 'Olsen' Barthel

**Format:** A replacement for the Workbench 2.x 'Format' command with many additional features and a basic gadtools interface. Can be made resident and sports a number of additional command line options. Also included is a code fragment which will correctly initialize data media of any size (floppy disks or hard disk partitions) which works both under Kickstart 1.2/1.3 and 2.x. Version 1.1, includes source in 'C' and assembly language. AmigaOS 2.x required. Author: Olaf 'Olsen' Barthel

**FracBlank:** A commodities screen blanker written for AmigaOS release 2.x. When running will blank the screen and start to draw real plane fractals such as described in the September 1986 issue of Scientific American. The resulting images may remind you of spiders' webs, lace or even the Chladnian patterns formed by grains of sand strewn across a vibrating surface. Version 1.4, includes source in 'C' and assembly language. AmigaOS 2.x required. Author: Olaf 'Olsen' Barthel

**Icon:** A tool which patches Workbench 2.x online to supply default icons for about 45 different file types ranging from LhArc archives to object code files. Enhances the 'Show All Files' option of Workbench which by default only knows two types of file icons: Tool and Project. If enabled scans all files in a directory which do not have an icon file supplied and tries to determine their file types. When done, tricks Workbench into believing that there are proper icons for these files in the directory. Includes source in 'C' and assembly language. AmigaOS 2.x required. Author: Olaf 'Olsen' Barthel

**KeyMacro:** A keyboard macro program, configurable via a text file, that also supports hotkey program execution. You can map up to eight functions to each key, including keys such as cursor keys, the return key, etc. Version 1.12 with a number bug fixes and enhancements, an update to version 1.8 on disk 436. Includes source in 'C' and assembly language. Author: Olaf 'Olsen' Barthel

**SetBatt:** A tool to set the configuration information saved in the nonvolatile ram of the A3000 clock chip. Allows you to adjust the SCSI select timeout and other system settings. Includes source in 'C' and assembly language. AmigaOS 2.x required. Author: Olaf 'Olsen' Barthel

**termLite:** A tiny, almost brain dead telecommunications program written for AmigaOS release 2.x. Can be made resident, supports cut & paste from console window, written as a simple interface to the serial/parallel device driver. Version 1.0, includes source in 'C'. AmigaOS 2.x required. Author: Olaf 'Olsen' Barthel

#### FISH TO GO #536

**Chemesthetics:** Chemesthetics is a program that draws molecules using the calotte model. This means that atoms are drawn as bowls. Using this model, even extremely dangerous molecules like dioxine look quite nice. Chemesthetics has an Intuition user interface, can save pictures as IFF files, and has many example files. This is version 2.06, an update to version 2.00 on disk 427. Includes source in C. Author: Joerg Fenin / Metalworx

**IncRev:** A small program for a makefile or an lmkfile, to update revision numbers after each successful compile process. (Not related to but much more powerful than the increv program on disk 161 by Bryan Ford.) This is version 1.03, includes source in C. Author: Joerg Fenin / Metalworx

**PBlanker:** An enhanced Workbench 2.0 commodity, replacing "Blanker". Can blank screen and mouse pointer separately. This is version 37.04. Needs Kickstart 37.xx. Binary only. Author: Bernd Preusing

**WFile:** Small but useful tool to interchange ASCII files between different operating systems. Converts foreign symbols and adapts linefeed codes. Can also be used to expand tabs to multiple spaces or vice versa. It has builtin templates for interchange between the Amiga, MS-DOS and UNIX. Profiles can be used for common adaptations. Version 1.11, includes source in C. Author: Joerg Fenin / Metalworx

## FISH TO GO #537

### **AntiBorder:** CLI window frame remover.

Turns your CLI window into the largest possible borderless window that can be displayed on the WorkBench screen. I.E. Creates a 80 x 32 character CLI window for standard PAL Amigas. Version 1.0, includes assembly source. Author: Paul Hayter

**BootGames:** Two tiny games which fit on the bootblocks of a boot disk. BootOut is a Breakout style game and Squash is a squash type game (just like on those old TV games). BootOut V5.X and Squash V4.3. Includes assembly source. Author: Paul Hayter

**CHIP8:** CHIP8 is a programming language popularized by the RCA COSMAC VIP, DREAM 6800, and ETI-660 hobby computers. It is one step up from machine code (actual hex codes), yet allows the creation of some very simple, very small games. Version 1.1, includes assembly source and some demo games. Author: Paul Hayter

**Cross:** A program that creates crossword puzzles. Has a message data file to allow easy translation into almost any human language, with English and German currently supported. This is version 4.1, an update to version 3.3 on disk 464. Major new features are several new printer drivers including "generic" and "LaTeX", and many minor improvements. Includes source in M2Amiga Modula-2. Author: Jurgen Weinelt

**FO:** Fast Optimizer is a new optimizer for AmigaDOS disks. It can optimize one disk in less than 2 min, 30 sec. FO supports WorkBench or CLI modes and allows you to use unformatted disks as the destination. At least 1 Mb memory required. This is version v1.0. Includes some source in C. Author: Fabien Campagne.

**PaulCopy:** A single drive disk copier for Amigas with 1 Meg of RAM. Copies the source disk completely into memory in one go. Will also work with 512K Amigas, yet will require multiple disk swaps. Version II, includes assembly source. Author: Paul Hayter

**PBlanker:** An ultra tiny Screen Blanker/ Mouse Blanker/Mouse Accelerator thingy. Is about 700 bytes and doesn't have to be RUN. Version 1.3, includes assembly source. Author: Paul Hayter

**SMUSMIDI:** Converts SMUS Files output by Electronic Art's Deluxe Music Construction Set into standard MIDI files that can be read by modern sequencing software. Version 1.0, includes sample data files and source in C. Author: Thomas E. Janzen

**ZShell:** A very tiny (13Kb) CLI shell modelled along the lines of CSH, with over 40 internal commands. Some of its features include command line editing, history buffer, aliases, function key aliases, reverse polish calculator, multiple commands on one line, loops, If-Else-Endif constructs etc. This is version 1.30 and includes assembly source. Author: Paul Hayter

## FISH TO GO #538

**BCBMusic:** This is the second set of original music in the BCBmusic series. This set includes the songs "Still Waiting", "Transpose", and "Trilogy". Like the first set (on disk 428), no player program is required since it is actually compiled in with the song. These new songs include a new equalizer style graphic display which can be toggled on and off. WB2.0 compatible, binary only. Author: Brian C. Berg

**MatLabPatch:** Patches for both Matlab and Diglib on disk 499. The version of Diglib compiled for 68000 machines has some incorrectly compiled modules (compiled for 68020) and therefore causes crashes on 68000 machines. The Plot.sub module compiled for 68000 machines in the Matlab archive was linked using the incorrect Diglib and does not run on 68000 machines. This update provides correctly compiled replacements for both those files. Author: Jim Locker

**NGTC:** Release Two, Revision 1, of a trivia game based on "Star Trek: The Next Generation" TV series. This is a bug fix containing a new game module. You also need Release Two from disks 506 and 507, and Release One from disks 404 and 405. Created with The Director Version 2. Binary only. Author: Gregory Epley

## FISH TO GO #539

**DT:** A "DiskTest" utility for floppy disks, la Norton Utilities. Version 1.12, includes source (SAS-C). Author: Maurizio Loreti

**PF:** A CLI/Workbench interface to control an Hewlett-Packard DeskJet 500 printer, enabling the user to select an internal font and to print one or more files, or to initialize the printer. Version 2.10, includes source (SAS-C) Author: Maurizio Loreti

**RPN:** An emulation of an Hewlett-Packard pocket computer on your screen. Version 1.00, includes source (SAS-C). Author: Maurizio Loreti

**SimpleRexx:** A set of routines that handle the low level ARexx work for you in such a way as to have your application work with or without ARexx on the target system. The goal of SimpleRexx is to make adding at least the minimum level of ARexx support

to an application a trivial task. Includes source. Author: Michael Sinz

**Uedit:** A nice shareware editor with learn mode, a command language, menu customization, hypertext, online help, a teach mode, split windows, copy and paste, undo, features. This is version 2.6h, an update to version 2.6e on disk 471. Binary only. Author: Rick Stiles

**VLTimer:** A clock/timer window that sticks on the VLT screen (or on the WorkBench if VLT is not running or opened on the WorkBench) to check connection times (and costs). Version 1.02, includes source (SAS-C); Author: Maurizio Loreti

## FISH TO GO #540

**Browser:** A "Programmer's Workbench". Allows you to easily and conveniently move, copy, rename, and delete files & directories from a CLI environment. Also provides a method to execute either Workbench or CLI programs by double-clicking them or by selecting them from a ParM like Menu with lots of arguments. A Browser 1.6 replacement, does everything Browser 1.6 does and a lot more. Version 1.0, includes source in C. Author: Sylvain Rougier, Pierre Carrette

**CLIXe:** An XIcon style program which uses parm.library. It allows you to execute a script starting from WB and is completely CLI compatible, because it is a CLI. Can use a real script file or take commands in its own TOOLTYPES. Includes source in C. Version 1.0. Author: Sylvain Rougier

**ParM:** Parameterable Menu. ParM allows you to build menus to run whatever program you have on a disk. ParM can run programs either in WorkBench or CLI mode. This is an alternative to MyMenu which can run only when workbench is loaded. ParM can have it's own little window, can attach menus to the CLI window you are running it from, or to the WB menus, just like MyMenu. This is version 3.00, an update to version 2.5r on disk 419. Includes source in C. Author: Sylvain Rougier, Pierre Carrette

**PatchReq:** A patch for system requesters and arp file requester. Replace arp file requester with the great req.library file requester. Patches AutoRequest() for requesters to appear under the mouse and more. Version 1.4. Includes source in C. Authors: Sylvain Rougier, Pierre Carrette

**Req:** An enhanced version of the interface to req.library for Aztec C 5.0. Pragmas supplied and glue put in a library rather than in an object file. Includes source in asm. Version 1.1. Author: Pierre Carrette



**SANA:** Release 2 of the Standard Amiga Network Architecture device driver specification. This is a specification for the device driver level only. Author: Raymond Brand, Martin Hunt, Perry Kivolowitz

**SetColors:** A Palette replacement program that does a lot more in only 3K. Can save and load color files, and update preferences. Update to version on disk 419, with bug fix. Includes source in C. Author: Pierre Carrette

**WBRUN:** A RunBack style program which use parm.library. Runs programs in WB mode from any CLI. Programs are fully detached. The program you run must support WB startup. Not related to WBRUN on disk 43. Includes source in C. Authors: Sylvain Rougier, Pierre Carrette

#### **FISH TO GO #541**

**4D:** Two programs for visualizing four-dimensional objects. The Tesseract program displays the three-dimensional projects of a hyper-cube (tesseract), a hyper-octahedron or a hyper-tetrahedron. These can be rotated in three and four dimensions. The 4D Navigator program moves you through the three-dimensional surface of a four-dimensional sphere. Version 1.01 for both. Binary only. Source available from author. Author: Jerry D. Hedden

**GIFMachine:** A program that will convert CompuServe GIF image files into IFF SHAM and 24bit ILBMs. It offers a number of extra options like dithering, horizontal and vertical flip, as well as automatic border removal. Requires KickStart version 2.0 or greater to run. This is version 2.137, an update to version 2.116 on disk 458. Includes source. Author: Christopher Wichura

**Llamatron:** A fast action, arcade style game, guaranteed to have your FILE button finger dangling off at the tendons. Hours of fun for you, blowing away horde after horde of alien fiends. Shareware, binary only. Author: Jeff Minter

**MineClearer:** Amiga version of the Minesweeper program under Windows 3.0. You are the captain of a ship and you have to clear the sea from mines. Shareware, version 1.0c, binary only. Author: Kopetzky Theodorich

**Steal:** A program that grabs parts out of a display. It is used to grab parts from Intuition's structures, such as gadgets, menus, and screens. Version 1.1, includes source. Author: Rick van Rein

**Thinkamania:** Playable demo version of a game like the legendary memory game. Includes superb hires graphics and sound effects. Version 2.1, binary only. Author:

Th.Schwoeppel/D.Respondek of Z.U.L.U. Softworx

#### **FISH TO GO #542**

**BootX:** Yet another virus killer. BootX can check the bootblock of a disk, check memory for any resident viruses, and scan a disk for link viruses. It can load bootblock libraries for you to write on your disks as an alternative for the boring DOS install bootblock. It can load brain files so you can add any new bootblocks that BootX does not yet recognize. BootX is written completely in assembly for maximum speed and minimum size. Fully supports AmigaDOS 2.0. Version 3.80d, an update to version 3.40 on disk 420. Binary only. Author: Peter Stuer

**ChemniMaTe:** A program to make animations of chemical reactions with the purpose of recording it on a video tape. It is a programming language, containing expressions, nested loops, etc. It can handle molecules with in total up to 64 atoms, and lines between atoms. Works correctly under PAL. Version 0.8, examples and source (in DICE C) included. Author: Klaas van Gend

**PowerSnap:** A utility that allows you to use the mouse to mark characters anywhere on the screen, and then paste them somewhere else, such as in another CLI or in a string gadget. Checks what font is used in the window you snap from and will look for the position of the characters automatically. Recognizes all non proportional fonts of up to 24 pixels wide and of any height. Works with AmigaDOS 2.0 in both shell and WorkBench environments. This is version 1.1, an update to version 1.0 on disk 467. Binary only. Author: Nico Francois

**PP:** Powerpacker Patcher is a small tool that patches the DOS library so that PowerPacker datafiles will start acting as if they were "normal" files. Sample use of PP would be to crunch all ".info" files. The icons will retain their functionality as long as PP is installed, and WB will never know the difference. Icons are useful, but take up a lot of valuable disk space. You may also use any text viewer, editor or IFF tool (or anything!) you desire directly on Powerpacker files! This is version 1.3, an update to version 1.0 on disk 515. Shareware, includes full source. Author: Michael Berg

**PPAnim:** An anim player for normal IFF ANIM opt 5 (DPaint III,...) files or ANIM files crunched with PowerPacker. The decrunching is done automatically as the file is read. Features many command line options, palette change during animation, full overscan PAL/NTSC support and yet it is only 7K. Compatible with AmigaDOS 2.0. Some new 2.0 features (Asl requester)

supported. Version 1.0a, an update to version 1.0 on disk 414. Binary only. Author: Nico Francois

**PPLoadSeg:** This program patches the loadseg routine to automatically recognize files crunched with PowerPacker. After running PPLoadSeg crunched libraries and devices are still recognized by AmigaDOS. You can even crunch fonts and use them as normally. Version 1.0, binary only. Author: Nico Francois

**PPMore:** A "more" replacement program that reads normal ascii text files as well as files crunched with PowerPacker. The crunched files can result in considerable disk space savings. This is version 1.8, an update to version 1.7 on disk 371. Enhancements include a Workbench 2.0 3D look under 1.3 and support for the Asl requester under 2.0. Binary only. Author: Nico Francois

**PPShow:** A "show" program for normal IFF ILBM files or ILBM files crunched with PowerPacker. The decrunching is done automatically as the file is read. Version 1.2a, update to version 1.2 on disk 371, binary only. Author: Nico Francois

**PPTYPE:** A "print" program that will print normal ascii files or files crunched with PowerPacker. Several nice features such as page headers and numbers, adjustable tab sizes, page info taken from preferences and more. Version 1.1a, update to version 1.1 on disk 371, binary only. Author: Nico Francois

**RemapInfo:** An icon color remapping tool that swaps the colors black and white. The program runs on 1.3, but when run on 2.0 it supports the Applcon feature. It allows you to drag all icons you wish to remap on RemapInfo's Applcon to recolor them. Version 1.0, binary only. Author: Nico Francois

**Selector:** A program that helps you assemble programs on a boot disk and start them in a user friendly way by putting up a window with gadgets to launch programs. Version 3.0, update to version 2.5 on disk 302. Binary only. Author: Nico Francois

**TheGuru:** A program every Amiga fan should have. Puts the guru back in Kickstart 2.0. A comeback you will not want to miss. New features include support for virtual and public screens, editing of phonemes and a full gadtools interface. Version 2.0, an update to version 1.0 on disk 378. Requires AmigaDOS 2.0. Binary only. Author: Nico Francois

**VCLI:** Voice Command Line Interface (VCLI) is an Amiga voice recognition program that learns and recognizes a set of voice commands. Each voice command is associated with an Amiga CLI command

that is executed when an incoming voice command is recognized. VCLI allows the execution of any Amiga CLI command by voice. Requires the Perfect Sound 3 audio digitizer. This is Version 2.0 of VCLI which offers improved performance, improved operability, and improved graphics for voiceprint display. Binary only. Author: Richard Horne

#### **FISH TO GO #543**

**AudioScope:** AudioScope is a realtime audio spectrum analyzer for the Amiga. Use AudioScope to examine the frequency spectrum of any audio signal received through the PerfectSound 3 audio digitizer. Due to the heavy computational load, an accelerated Amiga is recommended. Binary only. Author: Richard Horne

**Badger:** Reminder program for your startup-sequence. Badger will open a window and display any important events that are 'due'. Badger will not bother you if there is nothing to report. Events are entered via menu and prompts. This is version 2.05a, an update to version 2.01e on disk 432. Includes many new features such as event editing and automatic holiday notification. Shareware, binary only. Author: George Kerber

**ColorCatch:** A utility that lets you grab colors from a screen and save them as an executable file. This is version 2.0, an update to version 1.0 on disk 396. Includes source in assembler. Author: Preben Nielsen

**Day2Day:** A small program which can calculate the number of days between two dates. Very useful, if for example, you want to know how many days you have been alive. This is version 1.0. Includes source in assembler. Author: Preben Nielsen

**MouseXY:** A small utility that shows the mouse coordinates and the color at that position. It can be moved from screen to screen (automatically evacuates any closing screen). Is able to show coordinates even when you are moving/resizing windows or moving Workbench icons. This is version 1.1, an update to version 1.0 on disk 483. Includes source in assembler. Author: Preben Nielsen

**PictSaver:** A small utility that allows you cut rectangular portions of any screen and store them on disk as IFF-ILBM files. Also allows easy saving of windows and entire screens to disk. This is version 2.0, an update to 'PictSaver' version 1.0 on disk 494. Includes source in assembler. Author: Preben Nielsen

**PReader:** An all purpose reader that displays text, pictures, sounds, and animations, all of which may be uncompressed or compressed with a companion compression program

(not included). Text can include embedded static or animated illustrations and sounds. Version 5.1, freeware, binary only. Author: Chas A. Wyndham

**Spectrogram:** Amiga Spectrogram computes a frequency analysis of any 8 bit audio data file and creates a high resolution color display showing frequency content versus time. Display color is continuously adjustable. This type of display when applied to the human voice has been called a voiceprint. This technique has also been used to analyze sounds of many kinds of animals including birds, dolphins, whales, etc. The audio data file can be replayed at any desired rate, giving a simultaneous audio and visual representation of the sample. A selection of interesting audio samples for analysis by Amiga Spectrogram is included. Version 6.3, binary only. Author: Richard Horne

**TD:** A program like 'TrackDisplay' on disk 399 by Olaf Barthel. It monitors and displays the current track for each floppy disk connected to the Amiga. This is version 2.0, an update to version 1.0 on disk 483. Includes source in assembler. Author: Preben Nielsen

**WBplane:** Two very small tools to change the depth of the Workbench screen. AddWBplane adds a bitplane. SubWBplane subtracts a bitplane. Both can be run from both CLI and Workbench. This is version 1.0. Includes source in assembler. Author: Preben Nielsen

#### **FISH TO GO #544**

**AWP:** This program animates any wait pointer like the one in WorkBench 2.0. It installs a vertical blank interrupt to minimize CPU usage and is written 100% in assembler for maximum efficiency. It uses two hands for the clock, like it should be, and has nine different user selectable speeds. Requires AmigaOS 2.0. Version 1.0, binary only. Author: Damian Cox

**EraseDisk:** A small, fast program used to erase a disk by setting all bits on the disk to zero. Version 0.69, includes source in assembly. Author: Otto Bernhart

**LanderGame:** Lander 3DX is an X-Specs 3D Lunar Lander game. Maneuver your landing craft over a three dimensional fractal lunar landscape searching for a safe place to land. Watch your fuel, altitude, and slope of the surface beneath you. Fly your craft over, around, and behind the lunar peaks. Digitized sound. Two alternate lunar scenery files included. Requires X-Specs 3D glasses. Spectacular. Binary only. Author: Richard Horne

**RaiderGame:** Raider 3DX is a classic space strategy game for X-Specs 3D. Search for enemy on a 3D map of the galaxy. Warp transport to trouble spots and protect the Federation bases. Blast the enemy with your energy torpedoes. But watch your own energy reserves since you are the last hope of the galaxy. Digitized sound. Amazing 3D action. Requires X-Specs 3D glasses. Binary only. Author: Richard Horne

**TurboGIF:** Demo version of a very fast GIF viewer, that is three to fifteen times faster than similar programs. Currently TurboGIF produces very high resolution black and white images only. Makes an excellent "GIF previewer" to decide if a particular GIF is worth spending the time converting with one of the other converters. Shareware, version 1.0, binary only. Author: Steve Borden

**ZScroll:** A short program which scrolls ASCII text files in a small window on your Workbench screen. Includes both English and German versions. Version 1.0, includes source. Author: Mark Zeindlinger

#### **FISH TO GO #545**

**DrawMap:** Release 3.1 of a program for drawing representations of the Earth's surface. This release generates maps in any combination of 16 colors with full user palette control, larger map files with national boundaries, faster generation of box and globe views, an improved online Help facility, provision for saving and printing displays, and general tightening of the source code. Accelerated version requiring a 68020 CPU and 68881 FPU also provided. Full source code included. Requires 1.2 megabytes of memory. Update to version 2.25d on disk 485. Author: Bryan Brown.

#### **FISH TO GO #546**

**2View:** 2View is a ILBM picture viewer for use under Workbench 2.0. It supports all standard Amiga graphics modes, ARexx, and both the CLI and Workbench. A list of files to display can be used, or each filename can be given individually. Each picture that is displayed can be shown for a specified amount of time, or until the user clicks on the left mouse button. Version 1.11, includes source. Author: Dave Schreiber

**Budget:** A program to help with managing personal finances. Version 1.3.3, an update to version 1.302 on disk 452. Binary only. Author: Le Lay Serge Camille

**DiskPrint:** Prints disk labels (for 3.5" and 5.25" disks), primarily for FD library disks, with the ability to create, handle, load and save label library files so labels for most FD disks are available after a few mouseclicks. Features include different label sizes, library

files, directory-read-in, direct disk contents read-in, label library functions and printing labels for a whole series of disks in one turn. Works fine with every printer connected to the parallel port. This is version 3.1.2, an update to version 2.7.2 on disk 461. Shareware, binary only. Author: Jan Geissler

**DSound:** DSound is 8SVX sound sample player that plays samples directly off the hard drive. The sound sample is played as it is loaded, making it possible to play sound samples of any length even under limited memory conditions. Version 0.91a, includes source. Author: Dave Schreiber

**Icons:** Two collections of high quality, consistently designed icons for the Amiga Workbench. The color collections will require an 8 color Workbench (i.e. Workbench 2.0). The black and white collections are useable on any normal 4 color Workbench. One set of icons is based on the icons supplied with the GEM windowing system, and the other set is modeled after the icons on a Silicon Graphics Personal Iris. A bonus set of raytraced icons is included. Author: Kenneth Jennings

**WBLink:** WBLink corrects a deficiency in Workbench 2.0: the inability to create links to files and directories from Workbench. WBLink puts an 'AppIcon' on the Workbench screen that makes a link to any file or directory that is dropped on it. For Workbench 2.0 or later. Version 1.00, includes source. Author: Dave Schreiber

#### FISH TO GO #547

**EasyExpress:** A compiler tool for the users of Charlie Gibbs' A68k assembler and The Software Distillery's BLINK. EasyExpress does the same job better than your batch file and is much easier to change for current use. If you use many object files, EasyExpress can make your life much easier. You can do almost everything via mouse and just watch how easily the compilation of your program happens. Binary only. Author: Juha Lindfors

**FindName:** A program to be used in scripts. It allows you to verify the presence of certain structures in RAM. You can currently search for devices, libraries, memory, messageports, resources and tasks. The search is done by name. Version 1.0, includes source in assembly. Author: Preben Nielsen

**MMBShift:** A program that lets you use the middle mouse button (MMB) (on a three button mouse) as a SHIFT key when selecting multiple icons on the Workbench. Only uses 166 bytes of memory. Version 1.0,

includes source in assembly. Author: Preben Nielsen

**PowerSource:** A program for creating and editing intuition gadgets and menus. Previously known as GadgetED (disk 475). Includes a palette editor, generation of either C or assembly source, and binary saving for later loading and editing. This is version 3.0, includes source. Author: Jan van den Baard

**RMBShift:** A program that lets you use the right mouse button (RMB) as a SHIFT key when selecting multiple icons on the Workbench. Only uses 174 bytes of memory. Version 1.0, includes source in assembly. Author: Preben Nielsen

**VideoMaxe:** A program to manage one's private video tape collection. Both program and documentation are in German; no English version at this time. Version 3.00, binary only. Author: Stephan Surken

**View:** A text displayer with many controls and features including searches, file requestors, jump to editor etc. This is version 1.3, an update to version 1.0 on disk 504. Includes source. Author: Jan Van Den Baard

#### FISH TO GO #548

**FreePaint:** A freely redistributable painting program, much like the popular DPaint program. Version 35z, binary only. Author: Stefan G. Boldorf

**LabelMaker:** Allows you to create fancy, full sized, colored labels for 3.5" floppy disks. Version 1.5, includes source. Author: Stefan G. Boldorf

**MambaMove:** A game with the goal of moving an apple eating snake inside four walls until an exit appears. Includes source. Author: Stefan G. Boldorf

**MultiInstall:** A script driven program for the installation of larger program packages. Executes CLI like script files in a simple language. Version 1.0, includes source. Author: Stefan G. Boldorf

**SandGlass:** A program to animate the original Workbench busy pointer. Only for Workbench/Kickstart up to version 1.3. Version 1.0, includes source. Author: Dirk Rummelt

**TG:** No system without a graphical user interface is complete without an "Eyes" program. Includes source. Author: Thomas Geib

#### FISH TO GO #549

**Bugs:** Another gag program. Be careful! It may destroy graphics, but nothing else! Can be

stopped by pressing the firebutton of a joystick in port 1. Includes source in Modula II. Author: Robert Brandner

**FFEX:** Another program for fractals. Lots of features. Uses an interesting algorithm for extra speed. Source includes modules for reading/writing ILBM pictures, and for using the ARP filerequester in modula. Version 4.0. Author: Robert Brandner

**FontList:** Prints a list of the fonts in the FONTS: device to the printer. Prints name, available sizes and some text using the specified font. Includes source in Modula II. Author: Robert Brandner

**M2Icons:** New Icons for the M2Amiga System. Includes a script for easy installation. Author: Robert Brandner

**MouseMagic:** A little gag program. Can be stopped by closing its window. Includes source in Modula II. Author: Robert Brandner

**Reversi:** Version of the well known game. Features an 'intelligent' computer opponent. Includes source in Modula II. Author: Robert Brandner

**VerseWise:** Gospel (Matthew, Mark, Luke, & John) version 1.0 of a Bible view/output/search program. Opening a resizable window on the Workbench screen, it allows the user to jump to any specific verse, output scripture to a disk file, or find verses containing one or more specific words. It uses the King James Version of the Bible, compressed. Binary only. Author: Bruce Geerdes

#### FISH TO GO #550

**BeBopDemo:** A demonstration version of the commercial game BeBop 'N Drop. BeBop 'N Drop is a realtime graphical arcade puzzle game, a greatly enhanced version of the popular shareware game Obsess-O-Matic. The object is to fit the falling pieces together in such a way as to form complete horizontal rows, which will then disappear off of the board. BeBop 'N Drop contains 77 different levels of play, each with a different shape board. The game contains over 800 different playing pieces, more than 450K of digitized sound, and many interesting visual effects. Binary only. Author: Wayne Phillips

**ICalc:** An expression calculator with many powerful features, including user defined functions and variables, many built-in functions, script files, and special looping constructs. Handles expressions involving both real and complex numbers. This is version 1.1, an update to version 1.0 on disk 472. Includes source. Author: Martin Scott

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